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<110> Fishman, Mark C.

<120> Methods for Diagnosing and Treating
Heart Disease

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<150> US 60/175,787

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 Ser Ala Thr Ser Ser Ala Gln Lys Ile Thr Lys Ser Val Lys Ala Pro
 805 810 815
 Thr Val Lys Pro Ser Glu Thr Arg Val Arg Ala Glu Pro Thr Pro Leu
 820 825 830
 Pro Gln Phe Pro Phe Ala Asp Thr Pro Asp Thr Tyr Lys Ser Glu Ala
 835 840 845
 Gly Val Glu Val Lys Lys Glu Val Gly Val Ser Ile Thr Gly Thr Thr
 850 855 860
 Val Arg Glu Glu Arg Phe Glu Val Leu His Gly Arg Glu Ala Lys Val
 865 870 875 880

Thr Glu Thr Ala Arg Val Pro Ala Pro Val Glu Ile Pro Val Thr Pro
 885 890 895
 Pro Thr Leu Val Ser Gly Leu Lys Asn Val Thr Val Ile Glu Gly Glu
 900 905 910
 Ser Val Thr Leu Glu Cys His Ile Ser Gly Tyr Pro Ser Pro Thr Val
 915 920 925
 Thr Trp Tyr Arg Glu Asp Tyr Gln Ile Glu Ser Ser Ile Asp Phe Gln
 930 935 940
 Ile Thr Phe Gln Ser Gly Ile Ala Arg Leu Met Ile Arg Glu Ala Phe
 945 950 955 960
 Ala Glu Asp Ser Gly Arg Phe Thr Cys Ser Ala Val Asn Glu Ala Gly
 965 970 975
 Thr Val Ser Thr Ser Cys Tyr Leu Ala Val Gln Val Ser Glu Glu Phe
 980 985 990
 Glu Lys Glu Thr Thr Ala Val Thr Glu Lys Phe Thr Thr Glu Glu Lys
 995 1000 1005
 Arg Phe Val Glu Ser Arg Asp Val Val Met Thr Asp Thr Ser Leu Thr
 1010 1015 1020
 Glu Glu Gln Ala Gly Pro Gly Glu Pro Ala Ala Pro Tyr Phe Ile Thr
 1025 1030 1035 1040
 Lys Pro Val Val Gln Lys Leu Val Glu Gly Gly Ser Val Val Phe Gly
 1045 1050 1055
 Cys Gln Val Gly Gly Asn Pro Lys Pro His Val Tyr Trp Lys Lys Ser
 1060 1065 1070
 Gly Val Pro Leu Thr Thr Gly Tyr Arg Tyr Lys Val Ser Tyr Asn Lys
 1075 1080 1085
 Gln Thr Gly Glu Cys Lys Leu Val Ile Ser Met Thr Phe Ala Asp Asp
 1090 1095 1100
 Ala Gly Glu Tyr Thr Ile Val Val Arg Asn Lys His Gly Glu Thr Ser
 1105 1110 1115 1120
 Ala Ser Ala Ser Leu Leu Glu Glu Ala Asp Tyr Glu Leu Leu Met Lys
 1125 1130 1135
 Ser Gln Gln Glu Met Leu Tyr Gln Thr Gln Val Thr Ala Phe Val Gln
 1140 1145 1150
 Glu Pro Glu Val Gly Glu Thr Ala Pro Gly Phe Val Tyr Ser Glu Tyr
 1155 1160 1165
 Glu Lys Glu Tyr Glu Lys Glu Gln Ala Leu Ile Arg Lys Lys Met Ala
 1170 1175 1180
 Lys Asp Thr Val Val Val Arg Thr Tyr Val Glu Asp Gln Glu Phe His
 1185 1190 1195 1200
 Ile Ser Ser Phe Glu Glu Arg Leu Ile Lys Glu Ile Glu Tyr Arg Ile
 1205 1210 1215
 Ile Lys Thr Thr Leu Glu Glu Leu Leu Glu Glu Asp Gly Glu Glu Lys
 1220 1225 1230
 Met Ala Val Asp Ile Ser Glu Ser Glu Ala Val Glu Ser Gly Phe Asp
 1235 1240 1245
 Leu Arg Ile Lys Asn Tyr Arg Ile Leu Glu Gly Met Gly Val Thr Phe
 1250 1255 1260
 His Cys Lys Met Ser Gly Tyr Pro Leu Pro Lys Ile Ala Trp Tyr Lys
 1265 1270 1275 1280
 Asp Gly Lys Arg Ile Lys His Gly Glu Arg Tyr Gln Met Asp Phe Leu
 1285 1290 1295
 Gln Asp Gly Arg Ala Ser Leu Arg Ile Pro Val Val Leu Pro Glu Asp
 1300 1305 1310
 Glu Gly Ile Tyr Thr Ala Phe Ala Ser Asn Ile Lys Gly Asn Ala Ile
 1315 1320 1325
 Cys Ser Gly Lys Leu Tyr Val Glu Pro Ala Ala Pro Leu Gly Ala Pro
 1330 1335 1340

Thr Tyr Ile Pro Thr Leu Glu Pro Val Ser Arg Ile Arg Ser Leu Ser
 1345 1350 1355 1360
 Pro Arg Ser Val Ser Arg Ser Pro Ile Arg Met Ser Pro Ala Arg Met
 1365 1370 1375
 Ser Pro Ala Arg Met Ser Pro Ala Arg Met Ser Pro Ala Arg Met Ser
 1380 1385 1390
 Pro Gly Arg Arg Leu Glu Glu Thr Asp Glu Ser Gln Leu Glu Arg Leu
 1395 1400 1405
 Tyr Lys Pro Val Phe Val Leu Lys Pro Val Ser Phe Lys Cys Leu Glu
 1410 1415 1420
 Gly Gln Thr Ala Arg Phe Asp Leu Lys Val Val Gly Arg Pro Met Pro
 1425 1430 1435 1440
 Glu Thr Phe Trp Phe His Asp Gly Gln Gln Ile Val Asn Asp Tyr Thr
 1445 1450 1455
 His Lys Val Val Ile Lys Glu Asp Gly Thr Gln Ser Leu Ile Ile Val
 1460 1465 1470
 Pro Ala Thr Pro Ser Asp Ser Gly Glu Trp Thr Val Val Ala Gln Asn
 1475 1480 1485
 Arg Ala Gly Arg Ser Ser Ile Ser Val Ile Leu Thr Val Glu Ala Val
 1490 1495 1500
 Glu His Gln Val Lys Pro Met Phe Val Glu Lys Leu Lys Asn Val Asn
 1505 1510 1515 1520
 Ile Lys Glu Gly Ser Arg Leu Glu Met Lys Val Arg Ala Thr Gly Asn
 1525 1530 1535
 Pro Asn Pro Asp Ile Val Trp Leu Lys Asn Ser Asp Ile Ile Val Pro
 1540 1545 1550
 His Lys Tyr Pro Lys Ile Arg Ile Glu Gly Thr Lys Gly Glu Ala Ala
 1555 1560 1565
 Leu Lys Ile Asp Ser Thr Val Ser Gln Asp Ser Ala Trp Tyr Thr Ala
 1570 1575 1580
 Thr Ala Ile Asn Lys Ala Gly Arg Asp Thr Thr Arg Cys Lys Val Asn
 1585 1590 1595 1600
 Val Glu Val Glu Phe Ala Glu Pro Glu Pro Glu Arg Lys Leu Ile Ile
 1605 1610 1615
 Pro Arg Gly Thr Tyr Arg Ala Lys Glu Ile Ala Ala Pro Glu Leu Glu
 1620 1625 1630
 Pro Leu His Leu Arg Tyr Gly Gln Glu Gln Trp Glu Glu Gly Asp Leu
 1635 1640 1645
 Tyr Asp Lys Glu Lys Gln Gln Lys Pro Phe Phe Lys Lys Lys Leu Thr
 1650 1655 1660
 Ser Leu Arg Leu Lys Arg Phe Gly Pro Ala His Phe Glu Cys Arg Leu
 1665 1670 1675 1680
 Thr Pro Ile Ser Asp Pro Thr Met Val Val Glu Trp Leu His Asp Gly
 1685 1690 1695
 Lys Pro Leu Glu Ala Ala Asn Arg Leu Arg Met Ile Asn Glu Phe Gly
 1700 1705 1710
 Tyr Cys Ser Leu Asp Tyr Gly Val Ala Tyr Ser Arg Asp Ser Gly Ile
 1715 1720 1725
 Ile Thr Cys Arg Ala Thr Asn Lys Tyr Gly Thr Asp His Thr Ser Ala
 1730 1735 1740
 Thr Leu Ile Val Lys Asp Glu Lys Ser Leu Val Glu Glu Ser Gln Leu
 1745 1750 1755 1760
 Pro Glu Gly Arg Lys Gly Leu Gln Arg Ile Glu Glu Leu Glu Arg Met
 1765 1770 1775
 Ala His Glu Gly Ala Leu Thr Gly Val Thr Thr Asp Gln Lys Glu Lys
 1780 1785 1790
 Gln Lys Pro Asp Ile Val Leu Tyr Pro Glu Pro Val Arg Val Leu Glu
 1795 1800 1805

Gly	Glu	Thr	Ala	Arg	Phe	Arg	Cys	Arg	Val	Thr	Gly	Tyr	Pro	Gln	Pro	1810	1815	1820
Lys	Val	Asn	Trp	Tyr	Leu	Asn	Gly	Gln	Leu	Ile	Arg	Lys	Ser	Lys	Arg	1825	1830	1835
Phe	Arg	Val	Arg	Tyr	Asp	Gly	Ile	His	Tyr	Leu	Asp	Ile	Val	Asp	Cys	1845	1850	1855
Lys	Ser	Tyr	Asp	Thr	Gly	Glu	Val	Lys	Val	Thr	Ala	Glu	Asn	Pro	Glu	1860	1865	1870
Gly	Val	Ile	Glu	His	Lys	Val	Lys	Leu	Glu	Ile	Gln	Gln	Arg	Glu	Asp	1875	1880	1885
Phe	Arg	Ser	Val	Leu	Arg	Arg	Ala	Pro	Glu	Pro	Arg	Pro	Glu	Phe	His	1890	1895	1900
Val	His	Glu	Pro	Gly	Lys	Leu	Gln	Phe	Glu	Val	Gln	Lys	Val	Asp	Arg	1905	1910	1915
Pro	Val	Asp	Thr	Thr	Glu	Thr	Lys	Glu	Val	Val	Lys	Leu	Lys	Arg	Ala	1925	1930	1935
Glu	Arg	Ile	Thr	His	Glu	Lys	Val	Pro	Glu	Glu	Ser	Glu	Glu	Leu	Arg	1940	1945	1950
Ser	Lys	Phe	Lys	Arg	Arg	Thr	Glu	Glu	Gly	Tyr	Tyr	Glu	Ala	Ile	Thr	1955	1960	1965
Ala	Val	Glu	Leu	Lys	Ser	Arg	Lys	Lys	Asp	Glu	Ser	Tyr	Glu	Glu	Leu	1970	1975	1980
Leu	Arg	Lys	Thr	Lys	Asp	Glu	Leu	Leu	His	Trp	Thr	Lys	Glu	Leu	Thr	1985	1990	1995
Glu	Glu	Glu	Lys	Lys	Ala	Leu	Ala	Glu	Glu	Gly	Lys	Ile	Thr	Ile	Pro	2005	2010	2015
Thr	Phe	Lys	Pro	Asp	Lys	Ile	Glu	Leu	Ser	Pro	Ser	Met	Glu	Ala	Pro	2020	2025	2030
Lys	Ile	Phe	Glu	Arg	Ile	Gln	Ser	Gln	Thr	Val	Gly	Gln	Gly	Ser	Asp	2035	2040	2045
Ala	His	Phe	Arg	Val	Arg	Val	Val	Gly	Lys	Pro	Asp	Pro	Glu	Cys	Glu	2050	2055	2060
Trp	Tyr	Lys	Asn	Gly	Val	Lys	Ile	Glu	Arg	Ser	Asp	Arg	Ile	Tyr	Trp	2065	2070	2075
Tyr	Trp	Pro	Glu	Asp	Asn	Val	Cys	Glu	Leu	Val	Ile	Arg	Asp	Val	Thr	2085	2090	2095
Ala	Glu	Asp	Ser	Ala	Ser	Ile	Met	Val	Lys	Ala	Ile	Asn	Ile	Ala	Gly	2100	2105	2110
Glu	Thr	Ser	Ser	His	Ala	Phe	Leu	Leu	Val	Gln	Ala	Lys	Gln	Leu	Ile	2115	2120	2125
Thr	Phe	Thr	Gln	Glu	Leu	Gln	Asp	Val	Val	Ala	Lys	Glu	Lys	Asp	Thr	2130	2135	2140
Met	Ala	Thr	Phe	Glu	Cys	Glu	Thr	Ser	Glu	Pro	Phe	Val	Lys	Val	Lys	2145	2150	2155
Trp	Tyr	Lys	Asp	Gly	Met	Glu	Val	His	Glu	Gly	Asp	Lys	Tyr	Arg	Met	2165	2170	2175
His	Ser	Asp	Arg	Lys	Val	His	Phe	Leu	Ser	Ile	Leu	Thr	Ile	Asp	Thr	2180	2185	2190
Ser	Asp	Ala	Glu	Asp	Tyr	Ser	Cys	Val	Leu	Val	Glu	Asp	Glu	Asn	Val	2195	2200	2205
Lys	Thr	Thr	Ala	Lys	Leu	Ile	Val	Glu	Gly	Ala	Val	Val	Glu	Phe	Val	2210	2215	2220
Lys	Glu	Leu	Gln	Asp	Ile	Glu	Val	Pro	Glu	Ser	Tyr	Ser	Gly	Glu	Leu	2225	2230	2235
Glu	Cys	Ile	Val	Ser	Pro	Glu	Asn	Ile	Glu	Gly	Lys	Trp	Tyr	His	Asn	2245	2250	2255
Asp	Val	Glu	Leu	Lys	Ser	Asn	Gly	Lys	Tyr	Thr	Ile	Thr	Ser	Arg	Arg	2260	2265	2270

Gly Arg Gln Asn Leu Thr Val	Lys Asp Val Thr Lys	Glu Asp Gln Gly	
2275	2280	2285	
Glu Tyr Ser Phe Val Ile Asp	Gly Lys Lys Thr Thr	Cys Lys Leu Lys	
2290	2295	2300	
Met Lys Pro Arg Pro Ile Ala	Ile Leu Gln Gly Leu Ser	Asp Gln Lys	
2305	2310	2315	2320
Val Cys Glu Gly Asp Ile Val	Gln Leu Glu Val Lys Val	Ser Leu Glu	
2325	2330	2335	
Ser Val Glu Gly Val Trp Met	Lys Asp Gly Gln Glu Val	Gln Pro Ser	
2340	2345	2350	
Asp Arg Val His Ile Val Ile	Asp Lys Gln Ser His Met	Leu Leu Ile	
2355	2360	2365	
Glu Asp Met Thr Lys Glu Asp	Ala Gly Asn Tyr Ser Phe	Thr Ile Pro	
2370	2375	2380	
Ala Leu Gly Leu Ser Thr Ser	Gly Arg Val Ser Val Tyr	Ser Val Asp	
2385	2390	2395	2400
Val Ile Thr Pro Leu Lys Asp	Val Asn Val Ile Glu Gly	Thr Lys Ala	
2405	2410	2415	
Val Leu Glu Cys Lys Val Ser	Val Pro Asp Val Thr Ser	Val Lys Trp	
2420	2425	2430	
Tyr Leu Asn Asp Glu Gln Ile	Lys Pro Asp Asp Arg Val	Gln Ala Ile	
2435	2440	2445	
Val Lys Gly Thr Lys Gln Arg	Leu Val Ile Asn Arg Thr	His Ala Ser	
2450	2455	2460	
Asp Glu Gly Pro Tyr Lys Leu	Ile Val Gly Arg Val Glu	Thr Asn Cys	
2465	2470	2475	2480
Asn Leu Ser Val Glu Lys Ile	Lys Ile Ile Arg Gly Leu	Arg Asp Leu	
2485	2490	2495	
Thr Cys Thr Glu Thr Gln Asn	Val Val Phe Glu Val Glu	Leu Ser His	
2500	2505	2510	
Ser Gly Ile Asp Val Leu Trp	Asn Phe Lys Asp Lys Glu	Ile Lys Pro	
2515	2520	2525	
Ser Ser Lys Tyr Lys Ile Glu	Ala His Gly Lys Ile Tyr	Lys Leu Thr	
2530	2535	2540	
Val Leu Asn Met Met Lys Asp	Asp Glu Gly Lys Tyr Thr	Phe Tyr Ala	
2545	2550	2555	2560
Gly Glu Asn Met Thr Ser Gly	Lys Leu Thr Val Ala Gly	Gly Ala Ile	
2565	2570	2575	
Ser Lys Pro Leu Thr Asp Gln	Thr Val Ala Glu Ser Gln	Glu Ala Val	
2580	2585	2590	
Phe Glu Cys Glu Val Ala Asn	Pro Asp Ser Lys Gly Glu	Trp Leu Arg	
2595	2600	2605	
Asp Gly Lys His Leu Pro Leu	Thr Asn Asn Ile Arg Ser	Glu Ser Asp	
2610	2615	2620	
Gly His Lys Arg Arg Leu Ile	Ile Ala Ala Thr Lys Leu	Asp Asp Ile	
2625	2630	2635	2640
Gly Glu Tyr Thr Tyr Lys Val	Ala Thr Ser Lys Thr Ser	Ala Lys Leu	
2645	2650	2655	
Lys Val Glu Ala Val Lys Ile	Lys Lys Thr Leu Lys Asn	Leu Thr Val	
2660	2665	2670	
Thr Glu Thr Gln Asp Ala Val	Phe Thr Val Glu Leu Thr	His Pro Asn	
2675	2680	2685	
Val Lys Gly Val Gln Trp Ile	Lys Asn Gly Val Val Leu	Glu Ser Asn	
2690	2695	2700	
Glu Lys Tyr Ala Ile Ser Val	Lys Gly Thr Ile Tyr Ser	Leu Arg Ile	
2705	2710	2715	2720
Lys Asn Cys Ala Ile Val Asp	Glu Ser Val Tyr Gly Phe	Arg Leu Gly	
2725	2730	2735	

Arg	Leu	Gly	Ala	Ser	Ala	Arg	Leu	His	Val	Glu	Thr	Val	Lys	Ile	Ile		
			2740						2745						2750		
Lys	Lys	Pro	Lys	Asp	Val	Thr	Ala	Leu	Glu	Asn	Ala	Thr	Val	Ala	Phe		
			2755						2760						2765		
Glu	Val	Ser	Val	Ser	His	Asp	Thr	Val	Pro	Val	Lys	Trp	Phe	His	Lys		
			2770						2775						2780		
Ser	Val	Glu	Ile	Lys	Pro	Ser	Asp	Lys	His	Arg	Leu	Val	Ser	Glu	Arg		
			2785						2790						2800		
Lys	Val	His	Lys	Leu	Met	Leu	Gln	Asn	Ile	Ser	Pro	Ser	Asp	Ala	Gly		
				2805					2810						2815		
Glu	Tyr	Thr	Ala	Val	Val	Gly	Gln	Leu	Glu	Cys	Lys	Ala	Lys	Leu	Phe		
			2820						2825						2830		
Val	Glu	Thr	Leu	His	Ile	Thr	Lys	Thr	Met	Lys	Asn	Ile	Glu	Val	Pro		
			2835						2840						2845		
Glu	Thr	Lys	Thr	Ala	Ser	Phe	Glu	Cys	Glu	Val	Ser	His	Phe	Asn	Val		
			2850						2855						2860		
Pro	Ser	Met	Trp	Leu	Lys	Asn	Gly	Val	Glu	Ile	Glu	Met	Ser	Glu	Lys		
			2865						2870						2880		
Phe	Lys	Ile	Val	Val	Gln	Gly	Lys	Leu	His	Gln	Leu	Ile	Ile	Met	Asn		
				2885					2890						2895		
Thr	Ser	Thr	Glu	Asp	Ser	Ala	Glu	Tyr	Thr	Phe	Val	Cys	Gly	Asn	Asp		
			2900						2905						2910		
Gln	Val	Ser	Ala	Thr	Leu	Thr	Val	Thr	Pro	Ile	Met	Ile	Thr	Ser	Met		
			2915						2920						2925		
Leu	Lys	Asp	Ile	Asn	Ala	Glu	Glu	Lys	Asp	Thr	Ile	Thr	Phe	Glu	Val		
			2930						2935						2940		
Thr	Val	Asn	Tyr	Glu	Gly	Ile	Ser	Tyr	Lys	Trp	Leu	Lys	Asn	Gly	Val		
			2945						2950						2960		
Glu	Ile	Lys	Ser	Thr	Asp	Lys	Cys	Gln	Met	Arg	Thr	Lys	Lys	Leu	Thr		
				2965					2970						2975		
His	Ser	Leu	Asn	Ile	Arg	Asn	Val	His	Phe	Gly	Asp	Ala	Ala	Asp	Tyr		
			2980						2985						2990		
Thr	Phe	Val	Ala	Gly	Lys	Ala	Thr	Ser	Thr	Ala	Thr	Leu	Tyr	Val	Glu		
			2995						3000						3005		
Ala	Arg	His	Ile	Glu	Phe	Arg	Lys	His	Ile	Lys	Asp	Ile	Lys	Val	Leu		
			3010						3015						3020		
Glu	Lys	Lys	Arg	Ala	Met	Phe	Glu	Cys	Glu	Val	Ser	Glu	Pro	Asp	Ile		
			3025						3030						3040		
Thr	Val	Gln	Trp	Met	Lys	Asp	Asp	Gln	Glu	Leu	Gln	Ile	Thr	Asp	Arg		
				3045					3050						3055		
Ile	Lys	Ile	Gln	Lys	Glu	Lys	Tyr	Val	His	Arg	Leu	Leu	Ile	Pro	Ser		
				3060					3065						3070		
Thr	Arg	Met	Ser	Asp	Ala	Gly	Lys	Tyr	Thr	Val	Val	Ala	Gly	Gly	Asn		
			3075						3080						3085		
Val	Ser	Thr	Ala	Lys	Leu	Phe	Val	Glu	Gly	Arg	Asp	Val	Arg	Ile	Arg		
			3090						3095						3100		
Ser	Ile	Lys	Lys	Glu	Val	Gln	Val	Ile	Glu	Lys	Gln	Arg	Ala	Val	Val		
			3105						3110						3120		
Glu	Phe	Glu	Val	Asn	Glu	Asp	Asp	Val	Asp	Ala	His	Trp	Tyr	Lys	Asp		
				3125					3130						3135		
Gly	Ile	Glu	Ile	Asn	Phe	Gln	Val	Gln	Glu	Arg	His	Lys	Tyr	Val	Val		
			3140						3145						3150		
Glu	Arg	Arg	Ile	His	Arg	Met	Phe	Ile	Ser	Glu	Thr	Arg	Gln	Ser	Asp		
			3155						3160						3165		
Ala	Gly	Glu	Tyr	Thr	Phe	Val	Ala	Gly	Arg	Asn	Arg	Ser	Ser	Val	Thr		
			3170						3175						3180		
Leu	Tyr	Val	Asn	Ala	Pro	Glu	Pro	Pro	Gln	Val	Leu	Gln	Glu	Leu	Gln		
			3185						3190						3195		
																	3200

Pro Val Thr Val Gln Ser Gly Lys Pro Ala Arg Phe Cys Ala Met Ile
 3205 3210 3215
 Ser Gly Arg Pro Gln Pro Lys Ile Ser Trp Tyr Lys Glu Glu Gln Leu
 3220 3225 3230
 Leu Ser Thr Gly Phe Lys Cys Lys Phe Leu His Asp Gly Gln Glu Tyr
 3235 3240 3245
 Thr Leu Leu Leu Ile Glu Ala Phe Pro Glu Asp Ala Ala Val Tyr Thr
 3250 3255 3260
 Cys Glu Ala Lys Asn Asp Tyr Gly Val Ala Thr Thr Ser Ala Ser Leu
 3265 3270 3275 3280
 Ser Val Glu Val Pro Glu Val Val Ser Pro Asp Gln Glu Met Pro Val
 3285 3290 3295
 Tyr Pro Pro Ala Ile Ile Thr Pro Leu Gln Asp Thr Val Thr Ser Glu
 3300 3305 3310
 Gly Gln Pro Ala Arg Phe Gln Cys Arg Val Ser Gly Thr Asp Leu Lys
 3315 3320 3325
 Val Ser Trp Tyr Ser Lys Asp Lys Lys Ile Lys Pro Ser Arg Phe Phe
 3330 3335 3340
 Arg Met Thr Gln Phe Glu Asp Thr Tyr Gln Leu Glu Ile Ala Glu Ala
 3345 3350 3355 3360
 Tyr Pro Glu Asp Glu Gly Thr Tyr Thr Phe Val Ala Asn Asn Ala Val
 3365 3370 3375
 Gly Gln Val Ser Ser Thr Ala Asn Leu Ser Leu Glu Ala Pro Glu Ser
 3380 3385 3390
 Ile Leu His Glu Arg Ile Glu Gln Glu Ile Glu Met Glu Met Lys Glu
 3395 3400 3405
 Phe Ser Ser Ser Phe Leu Ser Ala Glu Glu Glu Gly Leu His Ser Ala
 3410 3415 3420
 Glu Leu Gln Leu Ser Lys Ile Asn Glu Thr Leu Glu Leu Leu Ser Glu
 3425 3430 3435 3440
 Ser Pro Val Tyr Pro Thr Lys Phe Asp Ser Glu Lys Glu Gly Thr Gly
 3445 3450 3455
 Pro Ile Phe Ile Lys Glu Val Ser Asn Ala Asp Ile Ser Met Gly Asp
 3460 3465 3470
 Val Ala Thr Leu Ser Val Thr Val Ile Gly Ile Pro Lys Pro Lys Ile
 3475 3480 3485
 Gln Trp Phe Phe Asn Gly Val Leu Leu Thr Pro Ser Ala Asp Tyr Lys
 3490 3495 3500
 Phe Val Phe Asp Gly Asp Asp His Ser Leu Ile Ile Leu Phe Thr Lys
 3505 3510 3515 3520
 Leu Glu Asp Glu Gly Glu Tyr Thr Cys Met Ala Ser Asn Asp Tyr Gly
 3525 3530 3535
 Lys Thr Ile Cys Ser Ala Tyr Leu Lys Ile Asn Ser Lys Gly Glu Gly
 3540 3545 3550
 His Lys Asp Thr Glu Thr Glu Ser Ala Val Ala Lys Ser Leu Glu Lys
 3555 3560 3565
 Leu Gly Gly Pro Cys Pro Pro His Phe Leu Lys Glu Leu Lys Pro Ile
 3570 3575 3580
 Arg Cys Ala Gln Gly Leu Pro Ala Ile Phe Glu Tyr Thr Val Val Gly
 3585 3590 3595 3600
 Glu Pro Ala Pro Thr Val Thr Trp Phe Lys Glu Asn Lys Gln Leu Cys
 3605 3610 3615
 Thr Ser Val Tyr Tyr Thr Ile Ile His Asn Pro Asn Gly Ser Gly Thr
 3620 3625 3630
 Phe Ile Val Asn Asp Pro Gln Arg Glu Asp Ser Gly Leu Tyr Ile Cys
 3635 3640 3645
 Lys Ala Glu Asn Met Leu Gly Glu Ser Thr Cys Ala Ala Glu Leu Leu
 3650 3655 3660

Val Leu Leu Glu Asp Thr Asp Met Thr Asp Thr Pro Cys Lys Ala Lys
3665 3670 3675 3680
Ser Thr Pro Glu Ala Pro Glu Asp Phe Pro Gln Thr Pro Leu Lys Gly
3685 3690 3695
Pro Ala Val Glu Ala Leu Asp Ser Glu Gln Glu Ile Ala Thr Phe Val
3700 3705 3710
Lys Asp Thr Ile Leu Lys Ala Ala Leu Ile Thr Glu Glu Asn Gln Gln
3715 3720 3725
Leu Ser Tyr Glu His Ile Ala Lys Ala Asn Glu Leu Ser Ser Gln Leu
3730 3735 3740
Pro Leu Gly Ala Gln Glu Leu Gln Ser Ile Leu Glu Gln Asp Lys Leu
3745 3750 3755 3760
Thr Pro Glu Ser Thr Arg Glu Phe Leu Cys Ile Asn Gly Ser Ile His
3765 3770 3775
Phe Gln Pro Leu Lys Glu Pro Ser Pro Asn Leu Gln Leu Gln Ile Val
3780 3785 3790
Gln Ser Gln Lys Thr Phe Ser Lys Glu Gly Ile Leu Met Pro Glu Glu
3795 3800 3805
Pro Glu Thr Gln Ala Val Leu Ser Asp Thr Glu Lys Ile Phe Pro Ser
3810 3815 3820
Ala Met Ser Ile Glu Gln Ile Asn Ser Leu Thr Val Glu Pro Leu Lys
3825 3830 3835 3840
Thr Leu Leu Ala Glu Pro Glu Gly Asn Tyr Pro Gln Ser Ser Ile Glu
3845 3850 3855
Pro Pro Met His Ser Tyr Leu Thr Ser Val Ala Glu Glu Val Leu Ser
3860 3865 3870
Leu Lys Glu Lys Thr Val Ser Asp Thr Asn Arg Glu Gln Arg Val Thr
3875 3880 3885
Leu Gln Lys Gln Glu Ala Gln Ser Ala Leu Ile Leu Ser Gln Ser Leu
3890 3895 3900
Ala Glu Gly His Val Glu Ser Leu Gln Ser Pro Asp Val Met Ile Ser
3905 3910 3915 3920
Gln Val Asn Tyr Glu Pro Leu Val Pro Ser Glu His Ser Cys Thr Glu
3925 3930 3935
Gly Gly Lys Ile Leu Ile Glu Ser Ala Asn Pro Leu Glu Asn Ala Gly
3940 3945 3950
Gln Asp Ser Ala Val Arg Ile Glu Glu Gly Lys Ser Leu Arg Phe Pro
3955 3960 3965
Leu Ala Leu Glu Glu Lys Gln Val Leu Leu Lys Glu Glu His Ser Asp
3970 3975 3980
Asn Val Val Met Pro Pro Asp Gln Ile Ile Glu Ser Lys Arg Glu Pro
3985 3990 3995 4000
Val Ala Ile Lys Lys Val Gln Glu Val Gln Gly Arg Asp Leu Leu Ser
4005 4010 4015
Lys Glu Ser Leu Leu Ser Gly Ile Pro Glu Glu Gln Arg Leu Asn Leu
4020 4025 4030
Lys Ile Gln Ile Cys Arg Ala Leu Gln Ala Ala Val Ala Ser Glu Gln
4035 4040 4045
Pro Gly Leu Phe Ser Glu Trp Leu Arg Asn Ile Glu Lys Val Glu Val
4050 4055 4060
Glu Ala Val Asn Ile Thr Gln Glu Pro Arg His Ile Met Cys Met Tyr
4065 4070 4075 4080
Leu Val Thr Ser Ala Lys Ser Val Thr Glu Glu Val Thr Ile Ile Ile
4085 4090 4095
Glu Asp Val Asp Pro Gln Met Ala Asn Leu Lys Met Glu Leu Arg Asp
4100 4105 4110
Ala Leu Cys Ala Ile Ile Tyr Glu Glu Ile Asp Ile Leu Thr Ala Glu
4115 4120 4125

Gly Pro Arg Ile Gln Gln Gly Ala Lys Thr Ser Leu Gln Glu Glu Met
 4130 4135 4140
 Asp Ser Phe Ser Gly Ser Gln Lys Val Glu Pro Ile Thr Glu Pro Glu
 4145 4150 4155 4160
 Val Glu Ser Lys Tyr Leu Ile Ser Thr Glu Glu Val Ser Tyr Phe Asn
 4165 4170 4175
 Val Gln Ser Arg Val Lys Tyr Leu Asp Ala Thr Pro Val Thr Lys Gly
 4180 4185 4190
 Val Ala Ser Ala Val Val Ser Asp Glu Lys Gln Asp Glu Ser Leu Lys
 4195 4200 4205
 Pro Ser Glu Glu Lys Glu Glu Ser Ser Ser Glu Ser Gly Thr Glu Glu
 4210 4215 4220
 Val Ala Thr Val Lys Ile Gln Glu Ala Glu Gly Gly Leu Ile Lys Glu
 4225 4230 4235 4240
 Asp Gly Pro Met Ile His Thr Pro Leu Val Asp Thr Val Ser Glu Glu
 4245 4250 4255
 Gly Asp Ile Val His Leu Thr Thr Ser Ile Thr Asn Ala Lys Glu Val
 4260 4265 4270
 Asn Trp Tyr Phe Glu Asn Lys Leu Val Pro Ser Asp Glu Lys Phe Lys
 4275 4280 4285
 Cys Leu Gln Asp Gln Asn Thr Tyr Thr Leu Val Ile Asp Lys Val Asn
 4290 4295 4300
 Thr Glu Asp His Gln Gly Glu Tyr Val Cys Glu Ala Leu Asn Asp Ser
 4305 4310 4315 4320
 Gly Lys Thr Ala Thr Ser Ala Lys Leu Thr Val Val Lys Arg Ala Ala
 4325 4330 4335
 Pro Val Ile Lys Arg Lys Ile Glu Pro Leu Glu Val Ala Leu Gly His
 4340 4345 4350
 Leu Ala Lys Phe Thr Cys Glu Ile Gln Ser Ala Pro Asn Val Arg Phe
 4355 4360 4365
 Gln Trp Phe Lys Ala Gly Arg Glu Ile Tyr Glu Ser Asp Lys Cys Ser
 4370 4375 4380
 Ile Arg Ser Ser Lys Tyr Ile Ser Ser Leu Glu Ile Leu Arg Thr Gln
 4385 4390 4395 4400
 Val Val Asp Cys Gly Glu Tyr Thr Cys Lys Ala Ser Asn Glu Tyr Gly
 4405 4410 4415
 Ser Val Ser Cys Thr Ala Thr Leu Thr Val Thr Val Pro Gly Gly Glu
 4420 4425 4430
 Lys Lys Val Arg Lys Leu Leu Pro Glu Arg Lys Pro Glu Pro Lys Glu
 4435 4440 4445
 Glu Val Val Leu Lys Ser Val Leu Arg Lys Arg Pro Glu Glu Glu Glu
 4450 4455 4460
 Pro Lys Val Glu Pro Lys Lys Leu Glu Lys Val Lys Lys Pro Ala Val
 4465 4470 4475 4480
 Pro Glu Pro Pro Pro Pro Lys Pro Val Glu Glu Val Glu Val Pro Thr
 4485 4490 4495
 Val Thr Lys Arg Glu Arg Lys Ile Pro Glu Pro Thr Lys Val Pro Glu
 4500 4505 4510
 Ile Lys Pro Ala Ile Pro Leu Pro Ala Pro Glu Pro Lys Pro Lys Pro
 4515 4520 4525
 Glu Ala Glu Val Lys Thr Ile Lys Pro Pro Pro Val Glu Pro Glu Pro
 4530 4535 4540
 Thr Pro Ile Ala Ala Pro Val Thr Val Pro Val Val Gly Lys Lys Ala
 4545 4550 4555 4560
 Glu Ala Lys Ala Pro Lys Glu Glu Ala Ala Lys Pro Lys Gly Pro Ile
 4565 4570 4575
 Lys Gly Val Pro Lys Lys Thr Pro Ser Pro Ile Glu Ala Glu Arg Arg
 4580 4585 4590

Lys Leu Arg Pro Gly Ser Gly Gly Glu Lys Pro Pro Asp Glu Ala Pro
 4595 4600 4605
 Phe Thr Tyr Gln Leu Lys Ala Val Pro Leu Lys Phe Val Lys Glu Ile
 4610 4615 4620
 Lys Asp Ile Ile Leu Thr Glu Ser Glu Phe Val Gly Ser Ser Ala Ile
 4625 4630 4635 4640
 Phe Glu Cys Leu Val Ser Pro Ser Thr Ala Ile Thr Thr Trp Met Lys
 4645 4650 4655
 Asp Gly Ser Asn Ile Arg Glu Ser Pro Lys His Arg Phe Ile Ala Asp
 4660 4665 4670
 Gly Lys Asp Arg Lys Leu His Ile Ile Asp Val Gln Leu Ser Asp Ala
 4675 4680 4685
 Gly Glu Tyr Thr Cys Val Leu Arg Leu Gly Asn Lys Glu Lys Thr Ser
 4690 4695 4700
 Thr Ala Lys Leu Val Val Glu Glu Leu Pro Val Arg Phe Val Lys Thr
 4705 4710 4715 4720
 Leu Glu Glu Glu Val Thr Val Val Lys Gly Gln Pro Leu Tyr Leu Ser
 4725 4730 4735
 Cys Glu Leu Asn Lys Glu Arg Asp Val Val Trp Arg Lys Asp Gly Lys
 4740 4745 4750
 Ile Val Val Glu Lys Pro Gly Arg Ile Val Pro Gly Val Ile Gly Leu
 4755 4760 4765
 Met Arg Ala Leu Thr Ile Asn Asp Ala Asp Asp Thr Asp Ala Gly Thr
 4770 4775 4780
 Tyr Thr Val Thr Val Glu Asn Ala Asn Asn Leu Glu Cys Ser Ser Cys
 4785 4790 4795 4800
 Val Lys Val Val Glu Val Ile Arg Asp Trp Leu Val Lys Pro Ile Arg
 4805 4810 4815
 Asp Gln His Val Lys Pro Lys Gly Thr Ala Ile Phe Ala Cys Asp Ile
 4820 4825 4830
 Ala Lys Asp Thr Pro Asn Ile Lys Trp Phe Lys Gly Tyr Asp Glu Ile
 4835 4840 4845
 Pro Ala Glu Pro Asn Asp Lys Thr Glu Ile Leu Arg Asp Gly Asn His
 4850 4855 4860
 Leu Tyr Leu Lys Ile Lys Asn Ala Met Pro Glu Asp Ile Ala Glu Tyr
 4865 4870 4875 4880
 Ala Val Glu Ile Glu Gly Lys Arg Tyr Pro Ala Lys Leu Thr Leu Gly
 4885 4890 4895
 Glu Arg Glu Val Glu Leu Leu Lys Pro Ile Glu Asp Val Thr Ile Tyr
 4900 4905 4910
 Glu Lys Glu Ser Ala Ser Phe Asp Ala Glu Ile Ser Glu Ala Asp Ile
 4915 4920 4925
 Pro Gly Gln Trp Lys Leu Lys Gly Glu Leu Leu Arg Pro Ser Pro Thr
 4930 4935 4940
 Cys Glu Ile Lys Ala Glu Gly Gly Lys Arg Phe Leu Thr Leu His Lys
 4945 4950 4955 4960
 Val Lys Leu Asp Gln Ala Gly Glu Val Leu Tyr Gln Ala Leu Asn Ala
 4965 4970 4975
 Ile Thr Thr Ala Ile Leu Thr Val Lys Glu Ile Glu Leu Asp Phe Ala
 4980 4985 4990
 Val Pro Leu Lys Asp Val Thr Val Pro Glu Arg Arg Gln Ala Arg Phe
 4995 5000 5005
 Glu Cys Val Leu Thr Arg Glu Ala Asn Val Ile Trp Ser Lys Gly Pro
 5010 5015 5020
 Asp Ile Ile Lys Ser Ser Asp Lys Phe Asp Ile Ile Ala Asp Gly Lys
 5025 5030 5035 5040
 Lys His Ile Leu Val Ile Asn Asp Ser Gln Phe Asp Asp Glu Gly Val
 5045 5050 5055

Tyr Thr Ala Glu Val Glu Gly Lys Lys Thr Ser Ala Arg Leu Phe Val
 5060 5065 5070
 Thr Gly Ile Arg Leu Lys Phe Met Ser Pro Leu Glu Asp Gln Thr Val
 5075 5080 5085
 Lys Glu Gly Glu Thr Ala Thr Phe Val Cys Glu Leu Ser His Glu Lys
 5090 5095 5100
 Met His Val Val Trp Phe Lys Asn Asp Ala Lys Leu His Thr Ser Arg
 5105 5110 5115 5120
 Thr Val Leu Ile Ser Ser Glu Gly Lys Thr His Lys Leu Glu Met Lys
 5125 5130 5135
 Glu Val Thr Leu Asp Asp Ile Ser Gln Ile Lys Ala Gln Val Lys Glu
 5140 5145 5150
 Leu Ser Ser Thr Ala Gln Leu Lys Val Leu Glu Ala Asp Pro Tyr Phe
 5155 5160 5165
 Thr Val Lys Leu His Asp Lys Thr Ala Val Glu Lys Asp Glu Ile Thr
 5170 5175 5180
 Leu Lys Cys Glu Val Ser Lys Asp Val Pro Val Lys Trp Phe Lys Asp
 5185 5190 5195 5200
 Gly Glu Glu Ile Val Pro Ser Pro Lys Tyr Ser Ile Lys Ala Asp Gly
 5205 5210 5215
 Leu Arg Arg Ile Leu Lys Ile Lys Lys Ala Asp Leu Lys Asp Lys Gly
 5220 5225 5230
 Glu Tyr Val Cys Asp Cys Gly Thr Asp Lys Thr Lys Ala Asn Val Thr
 5235 5240 5245
 Val Glu Ala Arg Leu Ile Glu Val Glu Lys Pro Leu Tyr Gly Val Glu
 5250 5255 5260
 Val Phe Val Gly Glu Thr Ala His Phe Glu Ile Glu Leu Ser Glu Pro
 5265 5270 5275 5280
 Asp Val His Gly Gln Trp Lys Leu Lys Gly Gln Pro Leu Thr Ala Ser
 5285 5290 5295
 Pro Asp Cys Glu Ile Ile Glu Asp Gly Lys Lys His Ile Leu Ile Leu
 5300 5305 5310
 His Asn Cys Gln Leu Gly Met Thr Gly Glu Val Ser Phe Gln Ala Ala
 5315 5320 5325
 Asn Ala Lys Ser Ala Ala Asn Leu Lys Val Lys Glu Leu Pro Leu Ile
 5330 5335 5340
 Phe Ile Thr Pro Leu Ser Asp Val Lys Val Phe Glu Lys Asp Glu Ala
 5345 5350 5355 5360
 Lys Phe Glu Cys Glu Val Ser Arg Glu Pro Lys Thr Phe Arg Trp Leu
 5365 5370 5375
 Lys Gly Thr Gln Glu Ile Thr Gly Asp Asp Arg Phe Glu Leu Ile Lys
 5380 5385 5390
 Asp Gly Thr Lys His Ser Met Val Ile Lys Ser Ala Ala Phe Glu Asp
 5395 5400 5405
 Glu Ala Lys Tyr Met Phe Glu Ala Glu Asp Lys His Thr Ser Gly Lys
 5410 5415 5420
 Leu Ile Ile Glu Gly Ile Arg Leu Lys Phe Leu Thr Pro Leu Lys Asp
 5425 5430 5435 5440
 Val Thr Ala Lys Glu Lys Glu Ser Ala Val Phe Thr Val Glu Leu Ser
 5445 5450 5455
 His Asp Asn Ile Arg Val Lys Trp Phe Lys Asn Asp Gln Arg Leu His
 5460 5465 5470
 Thr Thr Arg Ser Val Ser Met Gln Asp Glu Gly Lys Thr His Ser Ile
 5475 5480 5485
 Thr Phe Lys Asp Leu Ser Ile Asp Asp Thr Ser Gln Ile Arg Val Glu
 5490 5495 5500
 Ala Met Gly Met Ser Ser Glu Ala Lys Leu Thr Val Leu Glu Gly Asp
 5505 5510 5515 5520

Pro	Tyr	Phe	Thr	Gly	Lys	Leu	Gln	Asp	Tyr	Thr	Gly	Val	Glu	Lys	Asp		
				5525					5530					5535			
Glu	Val	Ile	Leu	Gln	Cys	Glu	Ile	Ser	Lys	Ala	Asp	Ala	Pro	Val	Lys		
			5540					5545					5550				
Trp	Phe	Lys	Asp	Gly	Lys	Glu	Ile	Lys	Pro	Ser	Lys	Asn	Ala	Val	Ile		
		5555					5560					5565					
Lys	Thr	Asp	Gly	Lys	Lys	Arg	Met	Leu	Ile	Leu	Lys	Lys	Ala	Leu	Lys		
	5570					5575					5580						
Ser	Asp	Ile	Gly	Gln	Tyr	Thr	Cys	Asp	Cys	Gly	Thr	Asp	Lys	Thr	Ser		
5585					5590					5595					5600		
Gly	Lys	Leu	Asp	Ile	Glu	Asp	Arg	Glu	Ile	Lys	Leu	Val	Arg	Pro	Leu		
			5605					5610						5615			
His	Ser	Val	Glu	Val	Met	Glu	Thr	Glu	Thr	Ala	Arg	Phe	Glu	Thr	Glu		
			5620					5625					5630				
Ile	Ser	Glu	Asp	Asp	Ile	His	Ala	Asn	Trp	Lys	Leu	Lys	Gly	Glu	Ala		
		5635					5640					5645					
Leu	Leu	Gln	Thr	Pro	Asp	Cys	Glu	Ile	Lys	Glu	Glu	Gly	Lys	Ile	His		
	5650					5655					5660						
Ser	Leu	Val	Leu	His	Asn	Cys	Arg	Leu	Asp	Gln	Thr	Gly	Gly	Val	Asp		
5665					5670					5675					5680		
Phe	Gln	Ala	Ala	Asn	Val	Lys	Ser	Ser	Ala	His	Leu	Arg	Val	Lys	Pro		
			5685					5690						5695			
Arg	Val	Ile	Gly	Leu	Leu	Arg	Pro	Leu	Lys	Asp	Val	Thr	Val	Thr	Ala		
			5700					5705					5710				
Gly	Glu	Thr	Ala	Thr	Phe	Asp	Cys	Glu	Leu	Ser	Tyr	Glu	Asp	Ile	Pro		
		5715				5720						5725					
Val	Glu	Trp	Tyr	Leu	Lys	Gly	Lys	Lys	Leu	Glu	Pro	Ser	Asp	Lys	Val		
	5730					5735					5740						
Val	Pro	Arg	Ser	Glu	Gly	Lys	Val	His	Thr	Leu	Thr	Leu	Arg	Asp	Val		
5745					5750					5755				5760			
Lys	Leu	Glu	Asp	Ala	Gly	Glu	Val	Gln	Leu	Thr	Ala	Lys	Asp	Phe	Lys		
			5765					5770						5775			
Thr	His	Ala	Asn	Leu	Phe	Val	Lys	Glu	Pro	Pro	Val	Glu	Phe	Thr	Lys		
			5780					5785					5790				
Pro	Leu	Glu	Asp	Gln	Thr	Val	Glu	Glu	Gly	Ala	Thr	Ala	Val	Leu	Glu		
	5795						5800					5805					
Cys	Glu	Val	Ser	Arg	Glu	Asn	Ala	Lys	Val	Lys	Trp	Phe	Lys	Asn	Gly		
	5810					5815					5820						
Thr	Glu	Ile	Leu	Lys	Ser	Lys	Lys	Tyr	Glu	Ile	Val	Ala	Asp	Gly	Arg		
5825					5830					5835				5840			
Val	Arg	Lys	Leu	Val	Ile	His	Asp	Cys	Thr	Pro	Glu	Asp	Ile	Lys	Thr		
			5845					5850					5855				
Tyr	Thr	Cys	Asp	Ala	Lys	Asp	Phe	Lys	Thr	Ser	Cys	Asn	Leu	Asn	Val		
		5860					5865					5870					
Val	Pro	Pro	His	Val	Glu	Phe	Leu	Arg	Pro	Leu	Thr	Asp	Leu	Gln	Val		
	5875						5880					5885					
Arg	Glu	Lys	Glu	Met	Ala	Arg	Phe	Glu	Cys	Glu	Leu	Ser	Arg	Glu	Asn		
	5890					5895					5900						
Ala	Lys	Val	Lys	Trp	Phe	Lys	Asp	Gly	Ala	Glu	Ile	Lys	Lys	Gly	Lys		
5905					5910					5915				5920			
Lys	Tyr	Asp	Ile	Ile	Ser	Lys	Gly	Ala	Val	Arg	Ile	Leu	Val	Ile	Asn		
			5925					5930						5935			
Lys	Cys	Leu	Leu	Asp	Asp	Glu	Ala	Glu	Tyr	Ser	Cys	Glu	Val	Arg	Thr		
		5940						5945					5950				
Ala	Arg	Thr	Ser	Gly	Met	Leu	Thr	Val	Leu	Glu	Glu	Glu	Ala	Val	Phe		
	5955					5960					5965						
Thr	Lys	Asn	Leu	Ala	Asn	Ile	Glu	Val	Ser	Glu	Thr	Asp	Thr	Ile	Lys		
	5970					5975					5980						

Leu Val Cys Glu Val Ser Lys Pro Gly Ala Glu Val Ile Trp Tyr Lys
 5985 5990 5995 6000
 Gly Asp Glu Glu Ile Ile Glu Thr Gly Arg Tyr Glu Ile Leu Thr Glu
 6005 6010 6015
 Gly Arg Lys Arg Ile Leu Val Ile Gln Asn Ala His Leu Glu Asp Ala
 6020 6025 6030
 Gly Asn Tyr Asn Cys Arg Leu Pro Ser Ser Arg Thr Asp Gly Lys Val
 6035 6040 6045
 Lys Val His Glu Leu Ala Ala Glu Phe Ile Ser Lys Pro Gln Asn Leu
 6050 6055 6060
 Glu Ile Leu Glu Gly Glu Lys Ala Glu Phe Val Cys Ser Ile Ser Lys
 6065 6070 6075 6080
 Glu Ser Phe Pro Val Gln Trp Lys Arg Asp Asp Lys Thr Leu Glu Ser
 6085 6090 6095
 Gly Asp Lys Tyr Asp Val Ile Ala Asp Gly Lys Lys Arg Val Leu Val
 6100 6105 6110
 Val Lys Asp Ala Thr Leu Gln Asp Met Gly Thr Tyr Val Val Met Val
 6115 6120 6125
 Gly Ala Ala Arg Ala Ala Ala His Leu Thr Val Ile Glu Lys Leu Arg
 6130 6135 6140
 Ile Val Val Pro Leu Lys Asp Thr Arg Val Lys Glu Gln Gln Glu Val
 6145 6150 6155 6160
 Val Phe Asn Cys Glu Val Asn Thr Glu Gly Ala Lys Ala Lys Trp Phe
 6165 6170 6175
 Arg Asn Glu Glu Ala Ile Phe Asp Ser Ser Lys Tyr Ile Ile Leu Gln
 6180 6185 6190
 Lys Asp Leu Val Tyr Thr Leu Arg Ile Arg Asp Ala His Leu Asp Asp
 6195 6200 6205
 Gln Ala Asn Tyr Asn Val Ser Leu Thr Asn His Arg Gly Glu Asn Val
 6210 6215 6220
 Lys Ser Ala Ala Asn Leu Ile Val Glu Glu Glu Asp Leu Arg Ile Val
 6225 6230 6235 6240
 Glu Pro Leu Lys Asp Ile Glu Thr Met Glu Lys Lys Ser Val Thr Phe
 6245 6250 6255
 Trp Cys Lys Val Asn Arg Leu Asn Val Thr Leu Lys Trp Thr Lys Asn
 6260 6265 6270
 Gly Glu Glu Val Pro Phe Asp Asn Arg Val Ser Tyr Arg Val Asp Lys
 6275 6280 6285
 Tyr Lys His Met Leu Thr Ile Lys Asp Cys Gly Phe Pro Asp Glu Gly
 6290 6295 6300
 Glu Tyr Ile Val Thr Ala Gly Gln Asp Lys Ser Val Ala Glu Leu Leu
 6305 6310 6315 6320
 Ile Ile Glu Ala Pro Thr Glu Phe Val Glu His Leu Glu Asp Gln Thr
 6325 6330 6335
 Val Thr Glu Phe Asp Asp Ala Val Phe Ser Cys Gln Leu Ser Arg Glu
 6340 6345 6350
 Lys Ala Asn Val Lys Trp Tyr Arg Asn Gly Arg Glu Ile Lys Glu Gly
 6355 6360 6365
 Lys Lys Tyr Lys Phe Glu Lys Asp Gly Ser Ile His Arg Leu Ile Ile
 6370 6375 6380
 Lys Asp Cys Arg Leu Asp Asp Glu Cys Glu Tyr Ala Cys Gly Val Glu
 6385 6390 6395 6400
 Asp Arg Lys Ser Arg Ala Arg Leu Phe Val Glu Glu Ile Pro Val Glu
 6405 6410 6415
 Ile Ile Arg Pro Pro Gln Asp Ile Leu Glu Ala Pro Gly Ala Asp Val
 6420 6425 6430
 Val Phe Leu Ala Glu Leu Asn Lys Asp Lys Val Glu Val Gln Trp Leu
 6435 6440 6445

Arg	Asn	Asn	Met	Val	Val	Val	Gln	Gly	Asp	Lys	His	Gln	Met	Met	Ser
6450						6455					6460				
Glu	Gly	Lys	Ile	His	Arg	Leu	Gln	Ile	Cys	Asp	Ile	Lys	Pro	Arg	Asp
6465					6470					6475					6480
Gln	Gly	Glu	Tyr	Arg	Phe	Ile	Ala	Lys	Asp	Lys	Glu	Ala	Arg	Ala	Lys
				6485					6490						6495
Leu	Glu	Leu	Ala	Ala	Pro	Lys	Ile	Lys	Thr	Ala	Asp	Gln	Asp	Leu	
			6500					6505					6510		
Val	Val	Asp	Val	Gly	Lys	Pro	Leu	Thr	Met	Val	Val	Pro	Tyr	Asp	Ala
			6515				6520						6525		
Tyr	Pro	Lys	Ala	Glu	Ala	Glu	Trp	Phe	Lys	Glu	Asn	Glu	Pro	Leu	Ser
	6530					6535					6540				
Thr	Lys	Thr	Ile	Asp	Thr	Thr	Ala	Glu	Gln	Thr	Ser	Phe	Arg	Ile	Leu
6545					6550					6555					6560
Glu	Ala	Lys	Lys	Gly	Asp	Lys	Gly	Arg	Tyr	Lys	Ile	Val	Leu	Gln	Asn
				6565					6570						6575
Lys	His	Gly	Lys	Ala	Glu	Gly	Phe	Ile	Asn	Leu	Lys	Val	Ile	Asp	Val
			6580					6585					6590		
Pro	Gly	Pro	Val	Arg	Asn	Leu	Glu	Val	Thr	Glu	Thr	Phe	Asp	Gly	Glu
			6595				6600					6605			
Val	Ser	Leu	Ala	Trp	Glu	Glu	Pro	Leu	Thr	Asp	Gly	Gly	Ser	Lys	Ile
	6610					6615					6620				
Ile	Gly	Tyr	Val	Val	Glu	Arg	Arg	Asp	Ile	Lys	Arg	Lys	Thr	Trp	Val
6625					6630					6635					6640
Leu	Ala	Thr	Asp	Arg	Ala	Glu	Ser	Cys	Glu	Phe	Thr	Val	Thr	Gly	Leu
				6645					6650						6655
Gln	Lys	Gly	Gly	Val	Glu	Tyr	Leu	Phe	Arg	Val	Ser	Ala	Arg	Asn	Arg
			6660					6665					6670		
Val	Gly	Thr	Gly	Glu	Pro	Val	Glu	Thr	Asp	Asn	Pro	Val	Glu	Ala	Arg
			6675				6680					6685			
Ser	Lys	Tyr	Asp	Val	Pro	Gly	Pro	Pro	Leu	Asn	Val	Thr	Ile	Thr	Asp
	6690					6695					6700				
Val	Asn	Arg	Phe	Gly	Val	Ser	Leu	Thr	Trp	Glu	Pro	Pro	Glu	Tyr	Asp
6705					6710					6715					6720
Gly	Gly	Ala	Glu	Ile	Thr	Asn	Tyr	Val	Ile	Glu	Leu	Arg	Asp	Lys	Thr
				6725					6730					6735	
Ser	Ile	Arg	Trp	Asp	Thr	Ala	Met	Thr	Val	Arg	Ala	Glu	Asp	Leu	Ser
			6740					6745					6750		
Ala	Thr	Val	Thr	Asp	Val	Val	Glu	Gly	Gln	Glu	Tyr	Ser	Phe	Arg	Val
			6755				6760					6765			
Arg	Ala	Gln	Asn	Arg	Ile	Gly	Val	Gly	Lys	Pro	Ser	Ala	Ala	Thr	Pro
	6770					6775					6780				
Phe	Val	Lys	Val	Ala	Asp	Pro	Ile	Glu	Arg	Pro	Ser	Pro	Pro	Val	Asn
6785					6790					6795					6800
Leu	Thr	Ser	Ser	Asp	Gln	Thr	Gln	Ser	Ser	Val	Gln	Leu	Lys	Trp	Glu
				6805					6810					6815	
Pro	Pro	Leu	Lys	Asp	Gly	Gly	Ser	Pro	Ile	Leu	Gly	Tyr	Ile	Ile	Glu
			6820					6825					6830		
Arg	Cys	Glu	Glu	Gly	Lys	Asp	Asn	Trp	Ile	Arg	Cys	Asn	Met	Lys	Leu
		6835					6840					6845			
Val	Pro	Glu	Leu	Thr	Tyr	Lys	Val	Thr	Gly	Leu	Glu	Lys	Gly	Asn	Lys
	6850					6855					6860				
Tyr	Leu	Tyr	Arg	Val	Ser	Ala	Glu	Asn	Lys	Ala	Gly	Val	Ser	Asp	Pro
6865					6870					6875					6880
Ser	Glu	Ile	Leu	Gly	Pro	Leu	Thr	Ala	Asp	Asp	Ala	Phe	Val	Glu	Pro
				6885					6890					6895	
Thr	Met	Asp	Leu	Ser	Ala	Phe	Lys	Asp	Gly	Leu	Glu	Val	Ile	Val	Pro
			6900						6905					6910	

Asn	Pro	Ile	Thr	Ile	Leu	Val	Pro	Ser	Thr	Gly	Tyr	Pro	Arg	Pro	Thr
		6915						6920					6925		
Ala	Thr	Trp	Cys	Phe	Gly	Asp	Lys	Val	Leu	Glu	Thr	Gly	Asp	Arg	Val
		6930					6935					6940			
Lys	Met	Lys	Thr	Leu	Ser	Ala	Tyr	Ala	Glu	Leu	Val	Ile	Ser	Pro	Ser
		6945				6950				6955				6960	
Glu	Arg	Ser	Asp	Lys	Gly	Ile	Tyr	Thr	Leu	Lys	Leu	Glu	Asn	Arg	Val
			6965						6970					6975	
Lys	Thr	Ile	Ser	Gly	Glu	Ile	Asp	Val	Asn	Val	Ile	Ala	Arg	Pro	Ser
		6980						6985					6990		
Ala	Pro	Lys	Glu	Leu	Lys	Phe	Gly	Asp	Ile	Thr	Lys	Asp	Ser	Val	His
		6995					7000					7005			
Leu	Thr	Trp	Glu	Pro	Pro	Asp	Asp	Asp	Gly	Gly	Ser	Pro	Leu	Thr	Gly
		7010				7015					7020				
Tyr	Val	Val	Glu	Lys	Arg	Glu	Val	Ser	Arg	Lys	Thr	Trp	Thr	Lys	Val
		7025			7030					7035				7040	
Met	Asp	Phe	Val	Thr	Asp	Leu	Glu	Phe	Thr	Val	Pro	Asp	Leu	Val	Gln
			7045						7050					7055	
Gly	Lys	Glu	Tyr	Leu	Phe	Lys	Val	Cys	Ala	Arg	Asn	Lys	Cys	Gly	Pro
		7060						7065					7070		
Gly	Glu	Pro	Ala	Tyr	Val	Asp	Glu	Pro	Val	Asn	Met	Ser	Thr	Pro	Ala
		7075				7080					7085				
Thr	Val	Pro	Asp	Pro	Pro	Glu	Asn	Val	Lys	Trp	Arg	Asp	Arg	Thr	Ala
		7090				7095					7100				
Asn	Ser	Ile	Phe	Leu	Thr	Trp	Asp	Pro	Pro	Lys	Asn	Asp	Gly	Gly	Ser
		7105			7110					7115				7120	
Arg	Ile	Lys	Gly	Tyr	Ile	Val	Glu	Arg	Cys	Pro	Arg	Gly	Ser	Asp	Lys
			7125					7130						7135	
Trp	Val	Ala	Cys	Gly	Glu	Pro	Val	Ala	Glu	Thr	Lys	Met	Glu	Val	Thr
		7140						7145					7150		
Gly	Leu	Glu	Glu	Gly	Lys	Trp	Tyr	Ala	Tyr	Arg	Val	Lys	Thr	Leu	Asn
		7155					7160				7165				
Arg	Gln	Gly	Ala	Ser	Lys	Pro	Ser	Arg	Pro	Thr	Glu	Glu	Ile	Gln	Ala
		7170				7175				7180					
Val	Asp	Thr	Gln	Glu	Ala	Pro	Glu	Ile	Phe	Leu	Asp	Val	Lys	Leu	Leu
		7185			7190					7195				7200	
Ala	Gly	Leu	Thr	Val	Lys	Ala	Gly	Thr	Lys	Ile	Glu	Leu	Pro	Ala	Thr
			7205					7210						7215	
Val	Thr	Gly	Lys	Pro	Glu	Pro	Lys	Ile	Thr	Trp	Thr	Lys	Ala	Asp	Met
		7220						7225					7230		
Ile	Leu	Lys	Gln	Asp	Lys	Arg	Ile	Thr	Ile	Glu	Asn	Val	Pro	Lys	Lys
		7235					7240					7245			
Ser	Thr	Val	Thr	Ile	Val	Asp	Ser	Lys	Arg	Ser	Asp	Thr	Gly	Thr	Tyr
		7250				7255					7260				
Ile	Ile	Glu	Ala	Val	Asn	Val	Cys	Gly	Arg	Ala	Thr	Ala	Val	Val	Glu
		7265			7270					7275				7280	
Val	Asn	Val	Leu	Asp	Lys	Pro	Gly	Pro	Pro	Ala	Ala	Phe	Asp	Ile	Thr
			7285					7290						7295	
Asp	Val	Thr	Asn	Glu	Ser	Cys	Leu	Leu	Thr	Trp	Asn	Pro	Pro	Arg	Asp
		7300						7305				7310			
Asp	Gly	Gly	Ser	Lys	Ile	Thr	Asn	Tyr	Val	Val	Glu	Arg	Arg	Ala	Thr
		7315					7320					7325			
Asp	Ser	Glu	Val	Trp	His	Lys	Leu	Ser	Ser	Thr	Val	Lys	Asp	Thr	Asn
		7330				7335					7340				
Phe	Lys	Ala	Thr	Lys	Leu	Ile	Pro	Asn	Lys	Glu	Tyr	Ile	Phe	Arg	Val
		7345			7350					7355				7360	
Ala	Ala	Glu	Asn	Met	Tyr	Gly	Ala	Gly	Glu	Pro	Val	Gln	Ala	Ser	Pro
			7365						7370					7375	

Ile	Thr	Ala	Lys	Tyr	Gln	Phe	Asp	Pro	Pro	Gly	Pro	Pro	Thr	Arg	Leu		
			7380					7385					7390				
Glu	Pro	Ser	Asp	Ile	Thr	Lys	Asp	Ala	Val	Thr	Leu	Thr	Trp	Cys	Glu		
			7395					7400					7405				
Pro	Asp	Asp	Asp	Gly	Gly	Ser	Pro	Ile	Thr	Gly	Tyr	Trp	Val	Glu	Arg		
			7410					7415					7420				
Leu	Asp	Pro	Asp	Thr	Asp	Lys	Trp	Val	Arg	Cys	Asn	Lys	Met	Pro	Val		
			7425					7430					7435				
Lys	Asp	Thr	Thr	Tyr	Arg	Val	Lys	Gly	Leu	Thr	Asn	Lys	Lys	Lys	Tyr		
			7445						7450						7455		
Arg	Phe	Arg	Val	Leu	Ala	Glu	Asn	Leu	Ala	Gly	Pro	Gly	Lys	Pro	Ser		
			7460						7465						7470		
Lys	Ser	Thr	Glu	Pro	Ile	Leu	Ile	Lys	Asp	Pro	Ile	Asp	Pro	Pro	Trp		
			7475						7480						7485		
Pro	Pro	Gly	Lys	Pro	Thr	Val	Lys	Asp	Val	Gly	Lys	Thr	Ser	Val	Arg		
			7490						7495						7500		
Leu	Asn	Trp	Thr	Lys	Pro	Glu	His	Asp	Gly	Gly	Ala	Lys	Ile	Glu	Ser		
			7505												7520		
Tyr	Val	Ile	Glu	Met	Leu	Lys	Thr	Gly	Thr	Asp	Glu	Trp	Val	Arg	Val		
			7525												7535		
Ala	Glu	Gly	Val	Pro	Thr	Thr	Gln	His	Leu	Leu	Pro	Gly	Leu	Met	Glu		
			7540												7550		
Gly	Gln	Glu	Tyr	Ser	Phe	Arg	Val	Arg	Ala	Val	Asn	Lys	Ala	Gly	Glu		
			7555												7565		
Ser	Glu	Pro	Ser	Glu	Pro	Ser	Asp	Pro	Val	Leu	Cys	Arg	Glu	Lys	Leu		
			7570												7580		
Tyr	Pro	Pro	Ser	Pro	Pro	Arg	Trp	Leu	Glu	Val	Ile	Asn	Ile	Thr	Lys		
			7585												7600		
Asn	Thr	Ala	Asp	Leu	Lys	Trp	Thr	Val	Pro	Glu	Lys	Asp	Gly	Gly	Ser		
			7605												7615		
Pro	Ile	Thr	Asn	Tyr	Ile	Val	Glu	Lys	Arg	Asp	Val	Arg	Arg	Lys	Gly		
			7620												7630		
Trp	Gln	Thr	Val	Asp	Thr	Thr	Val	Lys	Asp	Thr	Lys	Cys	Thr	Val	Thr		
			7635												7645		
Pro	Leu	Thr	Glu	Gly	Ser	Leu	Tyr	Val	Phe	Arg	Val	Ala	Ala	Glu	Asn		
			7650												7660		
Ala	Ile	Gly	Gln	Ser	Asp	Tyr	Thr	Glu	Ile	Glu	Asp	Ser	Val	Leu	Ala		
			7665												7680		
Lys	Asp	Thr	Phe	Thr	Thr	Pro	Gly	Pro	Pro	Tyr	Ala	Leu	Ala	Val	Val		
			7685												7695		
Asp	Val	Thr	Lys	Arg	His	Val	Asp	Leu	Lys	Trp	Glu	Pro	Pro	Lys	Asn		
			7700												7710		
Asp	Gly	Gly	Arg	Pro	Ile	Gln	Arg	Tyr	Val	Ile	Glu	Lys	Lys	Glu	Arg		
			7715												7725		
Leu	Gly	Thr	Arg	Trp	Val	Lys	Ala	Gly	Lys	Thr	Ala	Gly	Pro	Asp	Cys		
			7730												7740		
Asn	Phe	Arg	Val	Thr	Asp	Val	Ile	Glu	Gly	Thr	Glu	Val	Gln	Phe	Gln		
			7745												7760		
Val	Arg	Ala	Glu	Asn	Glu	Ala	Gly	Val	Gly	His	Pro	Ser	Glu	Pro	Thr		
			7765												7775		
Glu	Ile	Leu	Ser	Ile	Glu	Asp	Pro	Thr	Ser	Pro	Pro	Ser	Pro	Pro	Leu		
			7780												7790		
Asp	Leu	His	Val	Thr	Asp	Ala	Gly	Arg	Lys	His	Ile	Ala	Ile	Ala	Trp		
			7795												7805		
Lys	Pro	Pro	Glu	Lys	Asn	Gly	Gly	Ser	Pro	Ile	Ile	Gly	Tyr	His	Val		
			7810												7820		
Glu	Met	Cys	Pro	Val	Gly	Thr	Glu	Lys	Trp	Met	Arg	Val	Asn	Ser	Arg		
			7825												7840		

Pro Ile Lys Asp Leu Lys Phe Lys Val Glu Glu Gly Val Val Pro Asp
 7845 7850 7855
 Lys Glu Tyr Val Leu Arg Val Arg Ala Val Asn Ala Ile Gly Val Ser
 7860 7865 7870
 Glu Pro Ser Glu Ile Ser Glu Asn Val Val Ala Lys Asp Pro Asp Cys
 7875 7880 7885
 Lys Pro Thr Ile Asp Leu Glu Thr His Asp Ile Ile Val Ile Glu Gly
 7890 7895 7900
 Glu Lys Leu Ser Ile Pro Val Pro Phe Arg Ala Val Pro Val Pro Thr
 7905 7910 7915 7920
 Val Ser Trp His Lys Asp Gly Lys Glu Val Lys Ala Ser Asp Arg Leu
 7925 7930 7935
 Thr Met Lys Asn Asp His Ile Ser Ala His Leu Glu Val Pro Lys Ser
 7940 7945 7950
 Val Arg Ala Asp Ala Gly Ile Tyr Thr Ile Thr Leu Glu Asn Lys Leu
 7955 7960 7965
 Gly Ser Ala Thr Ala Ser Ile Asn Val Lys Val Ile Gly Leu Pro Gly
 7970 7975 7980
 Pro Cys Lys Asp Ile Lys Ala Ser Asp Ile Thr Lys Ser Ser Cys Lys
 7985 7990 7995 8000
 Leu Thr Trp Glu Pro Pro Glu Phe Asp Gly Gly Thr Pro Ile Leu His
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 Tyr Val Leu Glu Arg Arg Glu Ala Gly Arg Arg Thr Tyr Ile Pro Val
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 Met Ser Gly Glu Asn Lys Leu Ser Trp Thr Val Lys Asp Leu Ile Pro
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 Asn Gly Glu Tyr Phe Phe Arg Val Lys Ala Val Asn Lys Val Gly Gly
 8050 8055 8060
 Gly Glu Tyr Ile Glu Leu Lys Asn Pro Val Ile Ala Gln Asp Pro Lys
 8065 8070 8075 8080
 Gln Pro Pro Asp Pro Pro Val Asp Val Glu Val His Asn Pro Thr Ala
 8085 8090 8095
 Glu Ala Met Thr Ile Thr Trp Lys Pro Pro Leu Tyr Asp Gly Gly Ser
 8100 8105 8110
 Lys Ile Met Gly Tyr Ile Ile Glu Lys Ile Ala Lys Gly Glu Glu Arg
 8115 8120 8125
 Trp Lys Arg Cys Asn Glu His Leu Val Pro Ile Leu Thr Tyr Thr Ala
 8130 8135 8140
 Lys Gly Leu Glu Glu Gly Lys Glu Tyr Gln Phe Arg Val Arg Ala Glu
 8145 8150 8155 8160
 Asn Ala Ala Gly Ile Ser Glu Pro Ser Arg Ala Thr Pro Pro Thr Lys
 8165 8170 8175
 Ala Val Asp Pro Ile Asp Ala Pro Lys Val Ile Leu Arg Thr Ser Leu
 8180 8185 8190
 Glu Val Lys Arg Gly Asp Glu Ile Ala Leu Asp Ala Ser Ile Ser Gly
 8195 8200 8205
 Ser Pro Tyr Pro Thr Ile Thr Trp Ile Lys Asp Glu Asn Val Ile Val
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 Pro Glu Glu Ile Lys Lys Arg Ala Ala Pro Leu Val Arg Arg Arg Lys
 8225 8230 8235 8240
 Gly Glu Val Gln Glu Glu Glu Pro Phe Val Leu Pro Leu Thr Gln Arg
 8245 8250 8255
 Leu Ser Ile Asp Asn Ser Lys Lys Gly Glu Ser Gln Leu Arg Val Arg
 8260 8265 8270
 Asp Ser Leu Arg Pro Asp His Gly Leu Tyr Met Ile Lys Val Glu Asn
 8275 8280 8285
 Asp His Gly Ile Ala Lys Ala Pro Cys Thr Val Ser Val Leu Asp Thr
 8290 8295 8300

Lys Phe Arg Val Ile Ala Lys Asn Lys Phe Gly Cys Gly Pro Pro Val
 8770 8775 8780
 Glu Ile Gly Pro Ile Leu Ala Val Asp Pro Leu Gly Pro Pro Thr Ser
 8785 8790 8795 8800
 Pro Glu Arg Leu Thr Tyr Thr Glu Arg Gln Arg Ser Thr Ile Thr Leu
 8805 8810 8815
 Asp Trp Lys Glu Pro Arg Ser Asn Gly Gly Ser Pro Ile Gln Gly Tyr
 8820 8825 8830
 Ile Ile Glu Lys Arg Arg His Asp Lys Pro Asp Phe Glu Arg Val Asn
 8835 8840 8845
 Lys Arg Leu Cys Pro Thr Thr Ser Phe Leu Val Glu Asn Leu Asp Glu
 8850 8855 8860
 His Gln Met Tyr Glu Phe Arg Val Lys Ala Val Asn Glu Ile Gly Glu
 8865 8870 8875 8880
 Ser Glu Pro Ser Leu Pro Leu Asn Val Val Ile Gln Asp Asp Glu Val
 8885 8890 8895
 Pro Pro Thr Ile Lys Leu Arg Leu Ser Val Arg Gly Asp Thr Ile Lys
 8900 8905 8910
 Val Lys Ala Gly Glu Pro Val His Ile Pro Ala Asp Val Thr Gly Leu
 8915 8920 8925
 Pro Met Pro Lys Ile Glu Trp Ser Lys Asn Glu Thr Val Ile Glu Lys
 8930 8935 8940
 Pro Thr Asp Ala Leu Gln Ile Thr Lys Glu Glu Val Ser Arg Ser Glu
 8945 8950 8955 8960
 Ala Lys Thr Glu Leu Ser Ile Pro Lys Ala Val Arg Glu Asp Lys Gly
 8965 8970 8975
 Thr Tyr Thr Val Thr Ala Ser Asn Arg Leu Gly Ser Val Phe Arg Asn
 8980 8985 8990
 Val His Val Glu Val Tyr Asp Arg Pro Ser Pro Pro Arg Asn Leu Ala
 8995 9000 9005
 Val Thr Asp Ile Lys Ala Glu Ser Cys Tyr Leu Thr Trp Asp Ala Pro
 9010 9015 9020
 Leu Asp Asn Gly Gly Ser Glu Ile Thr His Tyr Val Ile Asp Lys Arg
 9025 9030 9035 9040
 Asp Ala Ser Arg Lys Lys Ala Glu Trp Glu Glu Val Thr Asn Thr Ala
 9045 9050 9055
 Val Glu Lys Arg Tyr Gly Ile Trp Lys Leu Ile Pro Asn Gly Gln Tyr
 9060 9065 9070
 Glu Phe Arg Val Arg Ala Val Asn Lys Tyr Gly Ile Ser Asp Glu Cys
 9075 9080 9085
 Lys Ser Asp Lys Val Val Ile Gln Asp Pro Tyr Arg Leu Pro Gly Pro
 9090 9095 9100
 Pro Gly Lys Pro Lys Val Leu Ala Arg Thr Lys Gly Ser Met Leu Val
 9105 9110 9115 9120
 Ser Trp Thr Pro Pro Leu Asp Asn Gly Gly Ser Pro Ile Thr Gly Tyr
 9125 9130 9135
 Trp Leu Glu Lys Arg Glu Glu Gly Ser Pro Tyr Trp Ser Arg Val Ser
 9140 9145 9150
 Arg Ala Pro Ile Thr Lys Val Gly Leu Lys Gly Val Glu Phe Asn Val
 9155 9160 9165
 Pro Arg Leu Leu Glu Gly Val Lys Tyr Gln Phe Arg Ala Met Ala Ile
 9170 9175 9180
 Asn Ala Ala Gly Ile Gly Pro Pro Ser Glu Pro Ser Asp Pro Glu Val
 9185 9190 9195 9200
 Ala Gly Asp Pro Ile Phe Pro Pro Gly Pro Pro Ser Cys Pro Glu Val
 9205 9210 9215
 Lys Asp Lys Thr Lys Ser Ser Ile Ser Leu Gly Trp Lys Pro Pro Ala
 9220 9225 9230

Lys Asp Gly Gly Ser Pro Ile Lys Gly Tyr Ile Val Glu Met Gln Glu
 9235 9240 9245
 Glu Gly Thr Thr Asp Trp Lys Arg Val Asn Glu Pro Asp Lys Leu Ile
 9250 9255 9260
 Thr Thr Cys Glu Cys Val Val Pro Asn Leu Lys Glu Leu Arg Lys Tyr
 9265 9270 9275 9280
 Arg Phe Arg Val Lys Ala Val Asn Glu Ala Gly Glu Ser Glu Pro Ser
 9285 9290 9295
 Asp Thr Thr Gly Glu Ile Pro Ala Thr Asp Ile Gln Glu Glu Pro Glu
 9300 9305 9310
 Val Phe Ile Asp Ile Gly Ala Gln Asp Cys Leu Val Cys Lys Ala Gly
 9315 9320 9325
 Ser Gln Ile Arg Ile Pro Ala Val Ile Lys Gly Arg Pro Thr Pro Lys
 9330 9335 9340
 Ser Ser Trp Glu Phe Asp Gly Lys Ala Lys Lys Ala Met Lys Asp Gly
 9345 9350 9355 9360
 Val His Asp Ile Pro Glu Asp Ala Gln Leu Glu Thr Ala Glu Asn Ser
 9365 9370 9375
 Ser Val Ile Ile Ile Pro Glu Cys Lys Arg Ser His Thr Gly Lys Tyr
 9380 9385 9390
 Ser Ile Thr Ala Lys Asn Lys Ala Gly Gln Lys Thr Ala Asn Cys Arg
 9395 9400 9405
 Val Lys Val Met Asp Val Pro Gly Pro Pro Lys Asp Leu Lys Val Ser
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 Asp Ile Thr Arg Gly Ser Cys Arg Leu Ser Trp Lys Met Pro Asp Asp
 9425 9430 9435 9440
 Asp Gly Gly Asp Arg Ile Lys Gly Tyr Val Ile Glu Lys Arg Thr Ile
 9445 9450 9455
 Asp Gly Lys Ala Trp Thr Lys Val Asn Pro Asp Cys Gly Ser Thr Thr
 9460 9465 9470
 Phe Val Val Pro Asp Leu Leu Ser Glu Gln Gln Tyr Phe Phe Arg Val
 9475 9480 9485
 Arg Ala Glu Asn Arg Phe Gly Ile Gly Pro Pro Val Glu Thr Ile Gln
 9490 9495 9500
 Arg Thr Thr Ala Arg Asp Pro Ile Tyr Pro Pro Asp Pro Pro Ile Lys
 9505 9510 9515 9520
 Leu Lys Ile Gly Leu Ile Thr Lys Asn Thr Val His Leu Ser Trp Lys
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 Pro Pro Lys Asn Asp Gly Gly Ser Pro Val Thr His Tyr Ile Val Glu
 9540 9545 9550
 Cys Leu Ala Trp Asp Pro Thr Gly Thr Lys Lys Glu Ala Trp Arg Gln
 9555 9560 9565
 Cys Asn Lys Arg Asp Val Glu Glu Leu Gln Phe Thr Val Glu Asp Leu
 9570 9575 9580
 Val Glu Gly Gly Glu Tyr Glu Phe Arg Val Lys Ala Val Asn Ala Ala
 9585 9590 9595 9600
 Gly Val Ser Lys Pro Ser Ala Thr Val Gly Pro Cys Asp Cys Gln Arg
 9605 9610 9615
 Pro Asp Met Pro Pro Ser Ile Asp Leu Lys Glu Phe Met Glu Val Glu
 9620 9625 9630
 Glu Gly Thr Asn Val Asn Ile Val Ala Lys Ile Lys Gly Val Pro Phe
 9635 9640 9645
 Pro Thr Leu Thr Trp Phe Lys Ala Pro Pro Lys Lys Pro Asp Asn Lys
 9650 9655 9660
 Glu Pro Val Leu Tyr Asp Thr His Val Asn Lys Leu Val Val Asp Asp
 9665 9670 9675 9680
 Thr Cys Thr Leu Val Ile Pro Gln Ser Arg Arg Ser Asp Thr Gly Leu
 9685 9690 9695

Tyr Thr Ile Thr Ala Val Asn Asn Leu Gly Thr Ala Ser Lys Glu Met
 9700 9705 9710
 Arg Leu Asn Val Leu Gly Arg Pro Gly Pro Pro Val Gly Pro Ile Lys
 9715 9720 9725
 Phe Glu Ser Val Ser Ala Asp Gln Met Thr Leu Ser Trp Phe Pro Pro
 9730 9735 9740
 Lys Asp Asp Gly Gly Ser Lys Ile Thr Asn Tyr Val Ile Glu Lys Arg
 9745 9750 9755 9760
 Glu Ala Asn Arg Lys Thr Trp Val His Val Ser Ser Glu Pro Lys Glu
 9765 9770 9775
 Cys Thr Tyr Thr Ile Pro Lys Leu Leu Glu Gly His Glu Tyr Val Phe
 9780 9785 9790
 Arg Ile Met Ala Gln Asn Lys Tyr Gly Ile Gly Glu Pro Leu Asp Ser
 9795 9800 9805
 Glu Pro Glu Thr Ala Arg Asn Leu Phe Ser Val Pro Gly Ala Pro Asp
 9810 9815 9820
 Lys Pro Thr Val Ser Ser Val Thr Arg Asn Ser Met Thr Val Asn Trp
 9825 9830 9835 9840
 Glu Glu Pro Glu Tyr Asp Gly Gly Ser Pro Val Thr Gly Tyr Trp Leu
 9845 9850 9855
 Glu Met Lys Asp Thr Thr Ser Lys Arg Trp Lys Arg Val Asn Arg Asp
 9860 9865 9870
 Pro Ile Lys Ala Met Thr Leu Gly Val Ser Tyr Lys Val Thr Gly Leu
 9875 9880 9885
 Ile Glu Gly Ser Asp Tyr Gln Phe Arg Val Tyr Ala Ile Asn Ala Ala
 9890 9895 9900
 Gly Val Gly Pro Ala Ser Leu Pro Ser Asp Pro Ala Thr Ala Arg Asp
 9905 9910 9915 9920
 Pro Ile Ala Pro Pro Gly Pro Pro Phe Pro Lys Val Thr Asp Trp Thr
 9925 9930 9935
 Lys Ser Ser Ala Asp Leu Glu Trp Ser Pro Pro Leu Lys Asp Gly Gly
 9940 9945 9950
 Ser Lys Val Thr Gly Tyr Ile Val Glu Tyr Lys Glu Glu Gly Lys Glu
 9955 9960 9965
 Glu Trp Glu Lys Gly Lys Asp Lys Glu Val Arg Gly Thr Lys Leu Val
 9970 9975 9980
 Val Thr Gly Leu Lys Glu Gly Ala Phe Tyr Lys Phe Arg Val Ser Ala
 9985 9990 9995 10000
 Val Asn Ile Ala Gly Ile Gly Glu Pro Gly Glu Val Thr Asp Val Ile
 10005 10010 10015
 Glu Met Lys Asp Arg Leu Val Ser Pro Asp Leu Gln Leu Asp Ala Ser
 10020 10025 10030
 Val Arg Asp Arg Ile Val Val His Ala Gly Gly Val Ile Arg Ile Ile
 10035 10040 10045
 Ala Tyr Val Ser Gly Lys Pro Pro Pro Thr Val Thr Trp Asn Met Asn
 10050 10055 10060 1
 Glu Arg Thr Leu Pro Gln Glu Ala Thr Ile Glu Thr Thr Ala Ile Ser
 0065 10070 10075 10080
 Ser Ser Met Val Ile Lys Asn Cys Gln Arg Ser His Gln Gly Val Tyr
 10085 10090 10095
 Ser Leu Leu Ala Lys Asn Glu Ala Gly Glu Arg Lys Lys Thr Ile Ile
 10100 10105 10110
 Val Asp Val Leu Asp Val Pro Gly Pro Val Gly Thr Pro Phe Leu Ala
 10115 10120 10125
 His Asn Leu Thr Asn Glu Ser Cys Lys Leu Thr Trp Phe Ser Pro Glu
 10130 10135 10140 1
 Asp Asp Gly Gly Ser Pro Ile Thr Asn Tyr Val Ile Glu Lys Arg Glu
 0145 10150 10155 10160

Ser Asp Arg Arg Ala Trp Thr Pro Val Thr Tyr Thr Val Thr Arg Gln
 10165 10170 10175
 Asn Ala Thr Val Gln Gly Leu Ile Gln Gly Lys Ala Tyr Phe Phe Arg
 10180 10185 10190
 Ile Ala Ala Glu Asn Ser Ile Gly Met Gly Pro Phe Val Glu Thr Ser
 10195 10200 10205
 Glu Ala Leu Val Ile Arg Glu Pro Ile Thr Val Pro Glu Arg Pro Glu
 10210 10215 10220 1
 Asp Leu Glu Val Lys Glu Val Thr Lys Asn Thr Val Thr Leu Thr Trp
 0225 10230 10235 10240
 Asn Pro Pro Lys Tyr Asp Gly Gly Ser Glu Ile Ile Asn Tyr Val Leu
 10245 10250 10255
 Glu Ser Arg Leu Ile Gly Thr Glu Lys Phe His Lys Val Thr Asn Asp
 10260 10265 10270
 Asn Leu Leu Ser Arg Lys Tyr Thr Val Lys Gly Leu Lys Glu Gly Asp
 10275 10280 10285
 Thr Tyr Glu Tyr Arg Val Ser Ala Val Asn Ile Val Gly Gln Gly Lys
 10290 10295 10300 1
 Pro Ser Phe Cys Thr Lys Pro Ile Thr Cys Lys Asp Glu Leu Ala Pro
 0305 10310 10315 10320
 Pro Thr Leu His Leu Asp Phe Arg Asp Lys Leu Thr Ile Arg Val Gly
 10325 10330 10335
 Glu Ala Phe Ala Leu Thr Gly Arg Tyr Ser Gly Lys Pro Lys Pro Lys
 10340 10345 10350
 Val Ser Trp Phe Lys Asp Glu Ala Asp Val Leu Glu Asp Asp Arg Thr
 10355 10360 10365
 His Ile Lys Thr Thr Pro Ala Thr Leu Ala Leu Glu Lys Ile Lys Ala
 10370 10375 10380 1
 Lys Arg Ser Asp Ser Gly Lys Tyr Cys Val Val Val Glu Asn Ser Thr
 0385 10390 10395 10400
 Gly Ser Arg Lys Gly Phe Cys Gln Val Asn Val Val Asp His Pro Gly
 10405 10410 10415
 Pro Pro Val Gly Pro Val Ser Phe Asp Glu Val Thr Lys Asp Tyr Met
 10420 10425 10430
 Val Ile Ser Trp Lys Pro Pro Leu Asp Asp Gly Gly Ser Lys Ile Thr
 10435 10440 10445
 Asn Tyr Ile Ile Glu Lys Lys Glu Val Gly Lys Asp Val Trp Met Pro
 10450 10455 10460 1
 Val Thr Ser Ala Ser Ala Lys Thr Thr Cys Lys Val Ser Lys Leu Leu
 0465 10470 10475 10480
 Glu Gly Lys Asp Tyr Ile Phe Arg Ile His Ala Glu Asn Leu Tyr Gly
 10485 10490 10495
 Ile Ser Asp Pro Leu Val Ser Asp Ser Met Lys Ala Lys Asp Arg Phe
 10500 10505 10510
 Arg Val Pro Asp Ala Pro Asp Gln Pro Ile Val Thr Glu Val Thr Lys
 10515 10520 10525
 Asp Ser Ala Leu Val Thr Trp Asn Lys Pro His Asp Gly Gly Lys Pro
 10530 10535 10540 1
 Ile Thr Asn Tyr Ile Leu Glu Lys Arg Glu Thr Met Ser Lys Arg Trp
 0545 10550 10555 10560
 Ala Arg Val Thr Lys Asp Pro Ile His Pro Tyr Thr Lys Phe Arg Val
 10565 10570 10575
 Pro Asp Leu Leu Glu Gly Cys Gln Tyr Glu Phe Arg Val Ser Ala Glu
 10580 10585 10590
 Asn Glu Ile Gly Ile Gly Asp Pro Ser Pro Pro Ser Lys Pro Val Phe
 10595 10600 10605
 Ala Lys Asp Pro Ile Ala Lys Pro Ser Pro Pro Val Asn Pro Glu Ala
 10610 10615 10620 1

Ile Asp Thr Thr Cys Asn Ser Val Asp Leu Thr Trp Gln Pro Pro Arg
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 His Asp Gly Gly Ser Lys Ile Leu Gly Tyr Ile Val Glu Tyr Gln Lys
 10645 10650 10655
 Val Gly Asp Glu Glu Trp Arg Arg Ala Asn His Thr Pro Glu Ser Cys
 10660 10665 10670
 Pro Glu Thr Lys Tyr Lys Val Thr Gly Leu Arg Asp Gly Gln Thr Tyr
 10675 10680 10685
 Lys Phe Arg Val Leu Ala Val Asn Ala Ala Gly Glu Ser Asp Pro Ala
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 His Val Pro Glu Pro Val Leu Val Lys Asp Arg Leu Glu Pro Pro Glu
 0705 10710 10715 10720
 Leu Ile Leu Asp Ala Asn Met Ala Arg Glu Gln His Ile Lys Val Gly
 10725 10730 10735
 Asp Thr Leu Arg Leu Ser Ala Ile Ile Lys Gly Val Pro Phe Pro Lys
 10740 10745 10750
 Val Thr Trp Lys Lys Glu Asp Arg Asp Ala Pro Thr Lys Ala Arg Ile
 10755 10760 10765
 Asp Val Thr Pro Val Gly Ser Lys Leu Glu Ile Arg Asn Ala Ala His
 10770 10775 10780 1
 Glu Asp Gly Gly Ile Tyr Ser Leu Thr Val Glu Asn Pro Ala Gly Ser
 0785 10790 10795 10800
 Lys Thr Val Ser Val Lys Val Leu Val Leu Asp Lys Pro Gly Pro Pro
 10805 10810 10815
 Arg Asp Leu Glu Val Ser Glu Ile Arg Lys Asp Ser Cys Tyr Leu Thr
 10820 10825 10830
 Trp Lys Glu Pro Leu Asp Asp Gly Gly Ser Val Ile Thr Asn Tyr Val
 10835 10840 10845
 Val Glu Arg Arg Asp Val Ala Ser Ala Gln Trp Ser Pro Leu Ser Ala
 10850 10855 10860 1
 Thr Ser Lys Lys Lys Ser His Phe Ala Lys His Leu Asn Glu Gly Asn
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 Gln Tyr Leu Phe Arg Val Ala Ala Glu Asn Gln Tyr Gly Arg Gly Pro
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 Phe Val Glu Thr Pro Lys Pro Ile Lys Ala Leu Asp Pro Leu His Pro
 10900 10905 10910
 Pro Gly Pro Pro Lys Asp Leu His His Val Asp Val Asp Lys Thr Glu
 10915 10920 10925
 Val Ser Leu Val Trp Asn Lys Pro Asp Arg Asp Gly Gly Ser Pro Ile
 10930 10935 10940 1
 Thr Gly Tyr Leu Val Glu Tyr Gln Glu Glu Gly Thr Gln Asp Trp Ile
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 Lys Phe Lys Thr Val Thr Asn Leu Glu Cys Val Val Thr Gly Leu Gln
 10965 10970 10975
 Gln Gly Lys Thr Tyr Arg Phe Arg Val Lys Ala Glu Asn Ile Val Gly
 10980 10985 10990
 Leu Gly Leu Pro Asp Thr Thr Ile Pro Ile Glu Cys Gln Glu Lys Leu
 10995 11000 11005
 Val Pro Pro Ser Val Glu Leu Asp Val Lys Leu Ile Glu Gly Leu Val
 11010 11015 11020 1
 Val Lys Ala Gly Thr Thr Val Arg Phe Pro Ala Ile Ile Arg Gly Val
 1025 11030 11035 11040
 Pro Val Pro Thr Ala Lys Trp Thr Thr Asp Gly Ser Glu Ile Lys Thr
 11045 11050 11055
 Asp Glu His Tyr Thr Val Glu Thr Asp Asn Phe Ser Ser Val Leu Thr
 11060 11065 11070
 Ile Lys Asn Cys Leu Arg Arg Asp Thr Gly Glu Tyr Gln Ile Thr Val
 11075 11080 11085

Ser Asn Ala Ala Gly Ser Lys Thr Val Ala Val His Leu Thr Val Leu
 11090 11095 11100 1
 Asp Val Pro Gly Pro Pro Thr Gly Pro Ile Asn Ile Leu Asp Val Thr
 1105 11110 11115 11120
 Pro Glu His Met Thr Ile Ser Trp Gln Pro Pro Lys Asp Asp Gly Gly
 11125 11130 11135
 Ser Pro Val Ile Asn Tyr Ile Val Glu Lys Gln Asp Thr Arg Lys Asp
 11140 11145 11150
 Thr Trp Gly Val Val Ser Ser Gly Ser Ser Lys Thr Lys Leu Lys Ile
 11155 11160 11165
 Pro His Leu Gln Lys Gly Cys Glu Tyr Val Phe Arg Val Arg Ala Glu
 11170 11175 11180 1
 Asn Lys Ile Gly Val Gly Pro Pro Leu Asp Ser Thr Pro Thr Val Ala
 1185 11190 11195 11200
 Lys His Lys Phe Ser Pro Pro Ser Pro Pro Gly Lys Pro Val Val Thr
 11205 11210 11215
 Asp Ile Thr Glu Asn Ala Ala Thr Val Ser Trp Thr Leu Pro Lys Ser
 11220 11225 11230
 Asp Gly Gly Ser Pro Ile Thr Gly Tyr Tyr Met Glu Arg Arg Glu Val
 11235 11240 11245
 Thr Gly Lys Trp Val Arg Val Asn Lys Thr Pro Ile Ala Asp Leu Lys
 11250 11255 11260 1
 Phe Arg Val Thr Gly Leu Tyr Glu Gly Asn Thr Tyr Glu Phe Arg Val
 1265 11270 11275 11280
 Phe Ala Glu Asn Leu Ala Gly Leu Ser Lys Pro Ser Pro Ser Ser Asp
 11285 11290 11295
 Pro Ile Lys Ala Cys Arg Pro Ile Lys Pro Pro Gly Pro Pro Ile Asn
 11300 11305 11310
 Pro Lys Leu Lys Asp Lys Ser Arg Glu Thr Ala Asp Leu Val Trp Thr
 11315 11320 11325
 Lys Pro Leu Ser Asp Gly Gly Ser Pro Ile Leu Gly Tyr Val Val Glu
 11330 11335 11340 1
 Cys Gln Lys Pro Gly Thr Ala Gln Trp Asn Arg Ile Asn Lys Asp Glu
 1345 11350 11355 11360
 Leu Ile Arg Gln Cys Ala Phe Arg Val Pro Gly Leu Ile Glu Gly Asn
 11365 11370 11375
 Glu Tyr Arg Phe Arg Ile Lys Ala Ala Asn Ile Val Gly Glu Gly Glu
 11380 11385 11390
 Pro Arg Glu Leu Ala Glu Ser Val Ile Ala Lys Asp Ile Leu His Pro
 11395 11400 11405
 Pro Glu Val Glu Leu Asp Val Thr Cys Arg Asp Val Ile Thr Val Arg
 11410 11415 11420 1
 Val Gly Gln Thr Ile Arg Ile Leu Ala Arg Val Lys Gly Arg Pro Glu
 1425 11430 11435 11440
 Pro Asp Ile Thr Trp Thr Lys Glu Gly Lys Val Leu Val Arg Glu Lys
 11445 11450 11455
 Arg Val Asp Leu Ile Gln Asp Leu Pro Arg Val Glu Leu Gln Ile Lys
 11460 11465 11470
 Glu Ala Val Arg Ala Asp His Gly Lys Tyr Ile Ile Ser Ala Lys Asn
 11475 11480 11485
 Ser Ser Gly His Ala Gln Gly Ser Ala Ile Val Asn Val Leu Asp Arg
 11490 11495 11500 1
 Pro Gly Pro Cys Gln Asn Leu Lys Val Thr Asn Val Thr Lys Glu Asn
 1505 11510 11515 11520
 Cys Thr Ile Ser Trp Glu Asn Pro Leu Asp Asn Gly Gly Ser Glu Ile
 11525 11530 11535
 Thr Asn Phe Ile Val Glu Tyr Arg Lys Pro Asn Gln Lys Gly Trp Ser
 11540 11545 11550

Ile Val Ala Ser Asp Val Thr Lys Arg Leu Ile Lys Ala Asn Leu Leu
 11555 11560 11565
 Ala Asn Asn Glu Tyr Tyr Phe Arg Val Cys Ala Glu Asn Lys Val Gly
 11570 11575 11580 1
 Val Gly Pro Thr Ile Glu Thr Lys Thr Pro Ile Leu Ala Ile Asn Pro
 1585 11590 11595 11600
 Ile Asp Arg Pro Gly Glu Pro Glu Asn Leu His Ile Ala Asp Lys Gly
 11605 11610 11615
 Lys Thr Phe Val Tyr Leu Lys Trp Arg Arg Pro Asp Tyr Asp Gly Gly
 11620 11625 11630
 Ser Pro Asn Leu Ser Tyr His Val Glu Arg Arg Leu Lys Gly Ser Asp
 11635 11640 11645
 Asp Trp Glu Arg Val His Lys Gly Ser Ile Lys Glu Thr His Tyr Met
 11650 11655 11660 1
 Val Asp Arg Cys Val Glu Asn Gln Ile Tyr Glu Phe Arg Val Gln Thr
 1665 11670 11675 11680
 Lys Asn Glu Gly Gly Glu Ser Asp Trp Val Lys Thr Glu Glu Val Val
 11685 11690 11695
 Val Lys Glu Asp Leu Gln Lys Pro Val Leu Asp Leu Lys Leu Ser Gly
 11700 11705 11710
 Val Leu Thr Val Lys Ala Gly Asp Thr Ile Arg Leu Glu Ala Gly Val
 11715 11720 11725
 Arg Gly Lys Pro Phe Pro Glu Val Ala Trp Thr Lys Asp Lys Asp Ala
 11730 11735 11740 1
 Thr Asp Leu Thr Arg Ser Pro Arg Val Lys Ile Asp Thr Arg Ala Asp
 1745 11750 11755 11760
 Ser Ser Lys Phe Ser Leu Thr Lys Ala Lys Arg Ser Asp Gly Gly Lys
 11765 11770 11775
 Tyr Val Val Thr Ala Thr Asn Thr Ala Gly Ser Phe Val Ala Tyr Ala
 11780 11785 11790
 Thr Val Asn Val Leu Asp Lys Pro Gly Pro Val Arg Asn Leu Lys Ile
 11795 11800 11805
 Val Asp Val Ser Ser Asp Arg Cys Thr Val Cys Trp Asp Pro Pro Glu
 11810 11815 11820 1
 Asp Asp Gly Gly Cys Glu Ile Gln Asn Tyr Ile Leu Glu Lys Cys Glu
 1825 11830 11835 11840
 Thr Lys Arg Met Val Trp Ser Thr Tyr Ser Ala Thr Val Leu Thr Pro
 11845 11850 11855
 Gly Thr Thr Val Thr Arg Leu Ile Glu Gly Asn Glu Tyr Ile Phe Arg
 11860 11865 11870
 Val Arg Ala Glu Asn Lys Ile Gly Thr Gly Pro Pro Thr Glu Ser Lys
 11875 11880 11885
 Pro Val Ile Ala Lys Thr Lys Tyr Asp Lys Pro Gly Arg Pro Asp Pro
 11890 11895 11900 1
 Pro Glu Val Thr Lys Val Ser Lys Glu Glu Met Thr Val Val Trp Asn
 1905 11910 11915 11920
 Pro Pro Glu Tyr Asp Gly Gly Lys Ser Ile Thr Gly Tyr Phe Leu Glu
 11925 11930 11935
 Lys Lys Glu Lys His Ser Thr Arg Trp Val Pro Val Asn Lys Ser Ala
 11940 11945 11950
 Ile Pro Glu Arg Arg Met Lys Val Gln Asn Leu Leu Pro Asp His Glu
 11955 11960 11965
 Tyr Gln Phe Arg Val Lys Ala Glu Asn Glu Ile Gly Ile Gly Glu Pro
 11970 11975 11980 1
 Ser Leu Pro Ser Arg Pro Val Val Ala Lys Asp Pro Ile Glu Pro Pro
 1985 11990 11995 12000
 Gly Pro Pro Thr Asn Phe Arg Val Val Asp Thr Thr Lys His Ser Ile
 12005 12010 12015

Thr Leu Gly Trp Gly Lys Pro Val Tyr Asp Gly Gly Ala Pro Ile Ile
 12020 12025 12030
 Gly Tyr Val Val Glu Met Arg Pro Lys Ile Ala Asp Ala Ser Pro Asp
 12035 12040 12045
 Glu Gly Trp Lys Arg Cys Asn Ala Ala Ala Gln Leu Val Arg Lys Glu
 12050 12055 12060 1
 Phe Thr Val Thr Ser Leu Asp Glu Asn Gln Glu Tyr Glu Phe Arg Val
 2065 12070 12075 12080
 Cys Ala Gln Asn Gln Val Gly Ile Gly Arg Pro Ala Glu Leu Lys Glu
 12085 12090 12095
 Ala Ile Lys Pro Lys Glu Ile Leu Glu Pro Pro Glu Ile Asp Leu Asp
 12100 12105 12110
 Ala Ser Met Arg Lys Leu Val Ile Val Arg Ala Gly Cys Pro Ile Arg
 12115 12120 12125
 Leu Phe Ala Ile Val Arg Gly Arg Pro Ala Pro Lys Val Thr Trp Arg
 12130 12135 12140 1
 Lys Val Gly Ile Asp Asn Val Val Arg Lys Gly Gln Val Asp Leu Val
 2145 12150 12155 12160
 Asp Thr Met Ala Phe Leu Val Ile Pro Asn Ser Thr Arg Asp Asp Ser
 12165 12170 12175
 Gly Lys Tyr Ser Leu Thr Leu Val Asn Pro Ala Gly Glu Lys Ala Val
 12180 12185 12190
 Phe Val Asn Val Arg Val Leu Asp Thr Pro Gly Pro Val Ser Asp Leu
 12195 12200 12205
 Lys Val Ser Asp Val Thr Lys Thr Ser Cys His Val Ser Trp Ala Pro
 12210 12215 12220 1
 Pro Glu Asn Asp Gly Gly Ser Gln Val Thr His Tyr Ile Val Glu Lys
 2225 12230 12235 12240
 Arg Glu Ala Asp Arg Lys Thr Trp Ser Thr Val Thr Pro Glu Val Lys
 12245 12250 12255
 Lys Thr Ser Phe His Val Thr Asn Leu Val Pro Gly Asn Glu Tyr Tyr
 12260 12265 12270
 Phe Arg Val Thr Ala Val Asn Glu Tyr Gly Pro Gly Val Pro Thr Asp
 12275 12280 12285
 Val Pro Lys Pro Val Leu Ala Ser Asp Pro Leu Ser Glu Pro Asp Pro
 12290 12295 12300 1
 Pro Arg Lys Leu Glu Ala Thr Glu Met Thr Lys Asn Ser Ala Thr Leu
 2305 12310 12315 12320
 Ala Trp Leu Pro Pro Leu Arg Asp Gly Gly Ala Lys Ile Asp Gly Tyr
 12325 12330 12335
 Ile Ile Ser Tyr Arg Glu Glu Glu Gln Pro Ala Asp Arg Trp Thr Glu
 12340 12345 12350
 Tyr Ser Val Val Lys Asp Leu Ser Leu Val Val Thr Gly Leu Lys Glu
 12355 12360 12365
 Gly Lys Lys Tyr Lys Phe Arg Val Ala Ala Arg Asn Ala Val Gly Val
 12370 12375 12380 1
 Ser Leu Pro Arg Glu Ala Glu Gly Val Tyr Glu Ala Lys Glu Gln Leu
 2385 12390 12395 12400
 Leu Pro Pro Lys Ile Leu Met Pro Glu Gln Ile Thr Ile Lys Ala Gly
 12405 12410 12415
 Lys Lys Leu Arg Ile Glu Ala His Val Tyr Gly Lys Pro His Pro Thr
 12420 12425 12430
 Cys Lys Trp Lys Lys Gly Glu Asp Glu Val Val Thr Ser Ser His Leu
 12435 12440 12445
 Ala Val His Lys Ala Asp Ser Ser Ile Leu Ile Ile Lys Asp Val
 12450 12455 12460 1
 Thr Arg Lys Asp Ser Gly Tyr Tyr Ser Leu Thr Ala Glu Asn Ser Ser
 2465 12470 12475 12480

Gly Thr Asp Thr Gln Lys Ile Lys Val Val Val Met Asp Ala Pro Gly
 12485 12490 12495
 Pro Pro Gln Pro Pro Phe Asp Ile Ser Asp Ile Asp Ala Asp Ala Cys
 12500 12505 12510
 Ser Leu Ser Trp His Ile Pro Leu Glu Asp Gly Gly Ser Asn Ile Thr
 12515 12520 12525
 Asn Tyr Ile Val Glu Lys Cys Asp Val Ser Arg Gly Asp Trp Val Thr
 12530 12535 12540 1
 Ala Leu Ala Ser Val Thr Lys Thr Ser Cys Arg Val Gly Lys Leu Ile
 2545 12550 12555 12560
 Pro Gly Gln Glu Tyr Ile Phe Arg Val Arg Ala Glu Asn Arg Phe Gly
 12565 12570 12575
 Ile Ser Glu Pro Leu Thr Ser Pro Lys Met Val Ala Gln Phe Pro Phe
 12580 12585 12590
 Gly Val Pro Ser Glu Pro Lys Asn Ala Arg Val Thr Lys Val Asn Lys
 12595 12600 12605
 Asp Cys Ile Phe Val Ala Trp Asp Arg Pro Asp Ser Asp Gly Gly Ser
 12610 12615 12620 1
 Pro Ile Ile Gly Tyr Leu Ile Glu Arg Lys Glu Arg Asn Ser Leu Leu
 2625 12630 12635 12640
 Trp Val Lys Ala Asn Asp Thr Leu Val Arg Ser Thr Glu Tyr Pro Cys
 12645 12650 12655
 Ala Gly Leu Val Glu Gly Leu Glu Tyr Ser Phe Arg Ile Tyr Ala Leu
 12660 12665 12670
 Asn Lys Ala Gly Ser Ser Pro Pro Ser Lys Pro Thr Glu Tyr Val Thr
 12675 12680 12685
 Ala Arg Met Pro Val Asp Pro Pro Gly Lys Pro Glu Val Ile Asp Val
 12690 12695 12700 1
 Thr Lys Ser Thr Val Ser Leu Ile Trp Ala Arg Pro Lys His Asp Gly
 2705 12710 12715 12720
 Gly Ser Lys Ile Ile Gly Tyr Phe Val Glu Ala Cys Lys Leu Pro Gly
 12725 12730 12735
 Asp Lys Trp Val Arg Cys Asn Thr Ala Pro His Gln Ile Pro Gln Glu
 12740 12745 12750
 Glu Tyr Thr Ala Thr Gly Leu Glu Glu Lys Ala Gln Tyr Gln Phe Arg
 12755 12760 12765
 Ala Ile Ala Arg Thr Ala Val Asn Ile Ser Pro Pro Ser Glu Pro Ser
 12770 12775 12780 1
 Asp Pro Val Thr Ile Leu Ala Glu Asn Val Pro Pro Arg Ile Asp Leu
 2785 12790 12795 12800
 Ser Val Ala Met Lys Ser Leu Leu Thr Val Lys Ala Gly Thr Asn Val
 12805 12810 12815
 Cys Leu Asp Ala Thr Val Phe Gly Lys Pro Met Pro Thr Val Ser Trp
 12820 12825 12830
 Lys Lys Asp Gly Thr Leu Leu Lys Pro Ala Glu Gly Ile Lys Met Ala
 12835 12840 12845
 Met Gln Arg Asn Leu Cys Thr Leu Glu Leu Phe Ser Val Asn Arg Lys
 12850 12855 12860 1
 Asp Ser Gly Asp Tyr Thr Ile Thr Ala Glu Asn Ser Ser Gly Ser Lys
 2865 12870 12875 12880
 Ser Ala Thr Ile Lys Leu Lys Val Leu Asp Lys Pro Gly Pro Pro Ala
 12885 12890 12895
 Ser Val Lys Ile Asn Lys Met Tyr Ser Asp Arg Ala Met Leu Ser Trp
 12900 12905 12910
 Glu Pro Pro Leu Glu Asp Gly Gly Ser Glu Ile Thr Asn Tyr Ile Val
 12915 12920 12925
 Asp Lys Arg Glu Thr Ser Arg Pro Asn Trp Ala Gln Val Ser Ala Thr
 12930 12935 12940 1

Val Pro Ile Thr Ser Cys Ser Val Glu Lys Leu Ile Glu Gly His Glu
 2945 12950 12955 12960
 Tyr Gln Phe Arg Ile Cys Ala Glu Asn Lys Tyr Gly Val Gly Asp Pro
 12965 12970 12975
 Val Phe Thr Glu Pro Ala Ile Ala Lys Asn Pro Tyr Asp Pro Pro Gly
 12980 12985 12990
 Arg Cys Asp Pro Pro Val Ile Ser Asn Ile Thr Lys Asp His Met Thr
 12995 13000 13005
 Val Ser Trp Lys Pro Pro Ala Asp Asp Gly Gly Ser Pro Ile Thr Gly
 13010 13015 13020 1
 Tyr Leu Leu Glu Lys Arg Glu Thr Gln Ala Val Asn Trp Thr Lys Val
 3025 13030 13035 13040
 Asn Arg Lys Pro Ile Ile Glu Arg Thr Leu Lys Ala Thr Gly Leu Gln
 13045 13050 13055
 Glu Gly Thr Glu Tyr Glu Phe Arg Val Thr Ala Ile Asn Lys Ala Gly
 13060 13065 13070
 Pro Gly Lys Pro Ser Asp Ala Ser Lys Ala Ala Tyr Ala Arg Asp Pro
 13075 13080 13085
 Gln Tyr Pro Pro Ala Pro Pro Ala Phe Pro Lys Val Tyr Asp Thr Thr
 13090 13095 13100 1
 Arg Ser Ser Val Ser Leu Ser Trp Gly Lys Pro Ala Tyr Asp Gly Gly
 3105 13110 13115 13120
 Ser Pro Ile Ile Gly Tyr Leu Val Glu Val Lys Arg Ala Asp Ser Asp
 13125 13130 13135
 Asn Trp Val Arg Cys Asn Leu Pro Gln Asn Leu Gln Lys Thr Arg Phe
 13140 13145 13150
 Glu Val Thr Gly Leu Met Glu Asp Thr Gln Tyr Gln Phe Arg Val Tyr
 13155 13160 13165
 Ala Val Asn Lys Ile Gly Tyr Ser Asp Pro Ser Asp Val Pro Asp Lys
 13170 13175 13180 1
 His Tyr Pro Lys Asp Ile Leu Ile Pro Pro Glu Gly Glu His Asp Ala
 3185 13190 13195 13200
 Asp Leu Arg Lys Thr Leu Ile Leu Arg Ala Gly Val Thr Met Arg Leu
 13205 13210 13215
 Tyr Val Pro Val Lys Gly Arg Pro Pro Lys Ile Thr Trp Ser Lys
 13220 13225 13230
 Pro Asn Val Asn Leu Arg Asp Arg Ile Gly Leu Asp Ile Lys Ser Thr
 13235 13240 13245
 Asp Phe Asp Thr Phe Leu Arg Cys Glu Asn Val Asn Lys Tyr Asp Ala
 13250 13255 13260 1
 Gly Lys Tyr Ile Leu Thr Leu Glu Asn Ser Cys Gly Lys Lys Glu Tyr
 3265 13270 13275 13280
 Thr Ile Val Val Lys Val Leu Asp Thr Pro Gly Pro Pro Ile Asn Val
 13285 13290 13295
 Thr Val Lys Glu Ile Ser Lys Asp Ser Ala Tyr Val Thr Trp Glu Pro
 13300 13305 13310
 Pro Ile Ile Asp Gly Gly Ser Pro Ile Ile Asn Tyr Val Val Gln Lys
 13315 13320 13325
 Arg Asp Ala Glu Arg Lys Ser Trp Ser Thr Val Thr Thr Glu Cys Ser
 13330 13335 13340 1
 Lys Thr Ser Phe Arg Val Pro Asn Leu Glu Glu Gly Lys Ser Tyr Phe
 3345 13350 13355 13360
 Phe Arg Val Phe Ala Glu Asn Glu Tyr Gly Ile Gly Asp Pro Gly Glu
 13365 13370 13375
 Thr Arg Asp Ala Val Lys Ala Ser Gln Thr Pro Gly Pro Val Val Asp
 13380 13385 13390
 Leu Lys Val Arg Ser Val Ser Lys Ser Ser Cys Ser Ile Gly Trp Lys
 13395 13400 13405

Lys Pro His Ser Asp Gly Gly Ser Arg Ile Ile Gly Tyr Val Val Asp
 13410 13415 13420 1
 Phe Leu Thr Glu Glu Asn Lys Trp Gln Arg Val Met Lys Ser Leu Ser
 3425 13430 13435 13440
 Leu Gln Tyr Ser Ala Lys Asp Leu Thr Glu Gly Lys Glu Tyr Thr Phe
 13445 13450 13455
 Arg Val Ser Ala Glu Asn Glu Asn Gly Glu Gly Thr Pro Ser Glu Ile
 13460 13465 13470
 Thr Val Val Ala Arg Asp Asp Val Val Ala Pro Asp Leu Asp Leu Lys
 13475 13480 13485
 Gly Leu Pro Asp Leu Cys Tyr Leu Ala Lys Glu Asn Ser Asn Phe Arg
 13490 13495 13500 1
 Leu Lys Ile Pro Ile Lys Gly Lys Pro Ala Pro Ser Val Ser Trp Lys
 3505 13510 13515 13520
 Lys Gly Glu Asp Pro Leu Ala Thr Asp Thr Arg Val Ser Val Glu Ser
 13525 13530 13535
 Ser Ala Val Asn Thr Thr Leu Ile Val Tyr Asp Cys Gln Lys Ser Asp
 13540 13545 13550
 Ala Gly Lys Tyr Thr Ile Thr Leu Lys Asn Val Ala Gly Thr Lys Glu
 13555 13560 13565
 Gly Thr Ile Ser Ile Lys Val Val Gly Lys Pro Gly Ile Pro Thr Gly
 13570 13575 13580 1
 Pro Ile Lys Phe Asp Glu Val Thr Ala Glu Ala Met Thr Leu Lys Trp
 3585 13590 13595 13600
 Ala Pro Pro Lys Asp Asp Gly Gly Ser Glu Ile Thr Asn Tyr Ile Leu
 13605 13610 13615
 Glu Lys Arg Asp Ser Val Asn Asn Lys Trp Val Thr Cys Ala Ser Ala
 13620 13625 13630
 Val Gln Lys Thr Thr Phe Arg Val Thr Arg Leu His Glu Gly Met Glu
 13635 13640 13645
 Tyr Thr Phe Arg Val Ser Ala Glu Asn Lys Tyr Gly Val Gly Glu Gly
 13650 13655 13660 1
 Leu Lys Ser Glu Pro Ile Val Ala Arg His Pro Phe Asp Val Pro Asp
 3665 13670 13675 13680
 Ala Pro Pro Pro Pro Asn Ile Val Asp Val Arg His Asp Ser Val Ser
 13685 13690 13695
 Leu Thr Trp Thr Asp Pro Lys Lys Thr Gly Gly Ser Pro Ile Thr Gly
 13700 13705 13710
 Tyr His Leu Glu Phe Lys Glu Arg Asn Ser Leu Leu Trp Lys Arg Ala
 13715 13720 13725
 Asn Lys Thr Pro Ile Arg Met Arg Asp Phe Lys Val Thr Gly Leu Thr
 13730 13735 13740 1
 Glu Gly Leu Glu Tyr Glu Phe Arg Val Met Ala Ile Asn Leu Ala Gly
 3745 13750 13755 13760
 Val Gly Lys Pro Ser Leu Pro Ser Glu Pro Val Val Ala Leu Asp Pro
 13765 13770 13775
 Ile Asp Pro Pro Gly Lys Pro Glu Val Ile Asn Ile Thr Arg Asn Ser
 13780 13785 13790
 Val Thr Leu Ile Trp Thr Glu Pro Lys Tyr Asp Gly Gly His Lys Leu
 13795 13800 13805
 Thr Gly Tyr Ile Val Glu Lys Arg Asp Leu Pro Ser Lys Ser Trp Met
 13810 13815 13820 1
 Lys Ala Asn His Val Asn Val Pro Glu Cys Ala Phe Thr Val Thr Asp
 3825 13830 13835 13840
 Leu Val Glu Gly Gly Lys Tyr Glu Phe Arg Ile Arg Ala Lys Asn Thr
 13845 13850 13855
 Ala Gly Ala Ile Ser Ala Pro Ser Glu Ser Thr Glu Thr Ile Ile Cys
 13860 13865 13870

Lys Asp Glu Tyr Glu Ala Pro Thr Ile Val Leu Asp Pro Thr Ile Lys
 13875 13880 13885
 Asp Gly Leu Thr Ile Lys Ala Gly Asp Thr Ile Val Leu Asn Ala Ile
 13890 13895 13900 1
 Ser Ile Leu Gly Lys Pro Leu Pro Lys Ser Ser Trp Ser Lys Ala Gly
 3905 13910 13915 13920
 Lys Asp Ile Arg Pro Ser Asp Ile Thr Gln Ile Thr Ser Thr Pro Thr
 13925 13930 13935
 Ser Ser Met Leu Thr Ile Lys Tyr Ala Thr Arg Lys Asp Ala Gly Glu
 13940 13945 13950
 Tyr Thr Ile Thr Ala Thr Asn Pro Phe Gly Thr Lys Val Glu His Val
 13955 13960 13965
 Lys Val Thr Val Leu Asp Val Pro Gly Pro Pro Gly Pro Val Glu Ile
 13970 13975 13980 1
 Ser Asn Val Ser Ala Glu Lys Ala Thr Leu Thr Trp Thr Pro Pro Leu
 3985 13990 13995 14000
 Glu Asp Gly Gly Ser Pro Ile Lys Ser Tyr Ile Leu Glu Lys Arg Glu
 14005 14010 14015
 Thr Ser Arg Leu Leu Trp Thr Val Val Ser Glu Asp Ile Gln Ser Cys
 14020 14025 14030
 Arg His Val Ala Thr Lys Leu Ile Gln Gly Asn Glu Tyr Ile Phe Arg
 14035 14040 14045
 Val Ser Ala Val Asn His Tyr Gly Lys Gly Glu Pro Val Gln Ser Glu
 14050 14055 14060 1
 Pro Val Lys Met Val Asp Arg Phe Gly Pro Pro Gly Pro Pro Glu Lys
 4065 14070 14075 14080
 Pro Glu Val Ser Asn Val Thr Lys Asn Thr Ala Thr Val Ser Trp Lys
 14085 14090 14095
 Arg Pro Val Asp Asp Gly Gly Ser Glu Ile Thr Gly Tyr His Val Glu
 14100 14105 14110
 Arg Arg Glu Lys Lys Ser Leu Arg Trp Val Arg Ala Ile Lys Thr Pro
 14115 14120 14125
 Val Ser Asp Leu Arg Cys Lys Val Thr Gly Leu Gln Glu Gly Ser Thr
 14130 14135 14140 1
 Tyr Glu Phe Arg Val Ser Ala Glu Asn Arg Ala Gly Ile Gly Pro Pro
 4145 14150 14155 14160
 Ser Glu Ala Ser Asp Ser Val Leu Met Lys Asp Ala Ala Tyr Pro Pro
 14165 14170 14175
 Gly Pro Pro Ser Asn Pro His Val Thr Asp Thr Thr Lys Lys Ser Ala
 14180 14185 14190
 Ser Leu Ala Trp Gly Lys Pro His Tyr Asp Gly Gly Leu Glu Ile Thr
 14195 14200 14205
 Gly Tyr Val Val Glu His Gln Lys Val Gly Asp Glu Ala Trp Ile Lys
 14210 14215 14220 1
 Asp Thr Thr Gly Thr Ala Leu Arg Ile Thr Gln Phe Val Val Pro Asp
 4225 14230 14235 14240
 Leu Gln Thr Lys Glu Lys Tyr Asn Phe Arg Ile Ser Ala Ile Asn Asp
 14245 14250 14255
 Ala Gly Val Gly Glu Pro Ala Val Ile Pro Asp Val Glu Ile Val Glu
 14260 14265 14270
 Arg Glu Met Ala Pro Asp Phe Glu Leu Asp Ala Glu Leu Arg Arg Thr
 14275 14280 14285
 Leu Val Val Arg Ala Gly Leu Ser Ile Arg Ile Phe Val Pro Ile Lys
 14290 14295 14300 1
 Gly Arg Pro Ala Pro Glu Val Thr Trp Thr Lys Asp Asn Ile Asn Leu
 4305 14310 14315 14320
 Lys Asn Arg Ala Asn Ile Glu Asn Thr Glu Ser Phe Thr Leu Leu Ile
 14325 14330 14335

Ile Pro Glu Cys Asn Arg Tyr Asp Thr Gly Lys Phe Val Met Thr Ile
 14340 14345 14350
 Glu Asn Pro Ala Gly Lys Lys Ser Gly Phe Val Asn Val Arg Val Leu
 14355 14360 14365
 Asp Thr Pro Gly Pro Val Leu Asn Leu Arg Pro Thr Asp Ile Thr Lys
 14370 14375 14380 1
 Asp Ser Val Thr Leu His Trp Asp Leu Pro Leu Ile Asp Gly Gly Ser
 4385 14390 14395 14400
 Arg Ile Thr Asn Tyr Ile Val Glu Lys Arg Glu Ala Thr Arg Lys Ser
 14405 14410 14415
 Tyr Ser Thr Ala Thr Thr Lys Cys His Lys Cys Thr Tyr Lys Val Thr
 14420 14425 14430
 Gly Leu Ser Glu Gly Cys Glu Tyr Phe Phe Arg Val Met Ala Glu Asn
 14435 14440 14445
 Glu Tyr Gly Ile Gly Glu Pro Thr Glu Thr Thr Glu Pro Val Lys Ala
 14450 14455 14460 1
 Ser Glu Ala Pro Ser Pro Pro Asp Ser Leu Asn Ile Met Asp Ile Thr
 4465 14470 14475 14480
 Lys Ser Thr Val Ser Leu Ala Trp Pro Lys Pro Lys His Asp Gly Gly
 14485 14490 14495
 Ser Lys Ile Thr Gly Tyr Val Ile Glu Ala Gln Arg Lys Gly Ser Asp
 14500 14505 14510
 Gln Trp Thr His Ile Thr Thr Val Lys Gly Leu Glu Cys Val Val Arg
 14515 14520 14525
 Asn Leu Thr Glu Gly Glu Glu Tyr Thr Phe Gln Val Met Ala Val Asn
 14530 14535 14540 1
 Ser Ala Gly Arg Ser Ala Pro Arg Glu Ser Arg Pro Val Ile Val Lys
 4545 14550 14555 14560
 Glu Gln Thr Met Leu Pro Glu Leu Asp Leu Arg Gly Ile Tyr Gln Lys
 14565 14570 14575
 Leu Val Ile Ala Lys Ala Gly Asp Asn Ile Lys Val Glu Ile Pro Val
 14580 14585 14590
 Leu Gly Arg Pro Lys Pro Thr Val Thr Trp Lys Lys Gly Asp Gln Ile
 14595 14600 14605
 Leu Lys Gln Thr Gln Arg Val Asn Phe Glu Thr Thr Ala Thr Ser Thr
 14610 14615 14620 1
 Ile Leu Asn Ile Asn Glu Cys Val Arg Ser Asp Ser Gly Pro Tyr Pro
 4625 14630 14635 14640
 Leu Thr Ala Arg Asn Ile Val Gly Glu Val Gly Asp Val Ile Thr Ile
 14645 14650 14655
 Gln Val His Asp Ile Pro Gly Pro Pro Thr Gly Pro Ile Lys Phe Asp
 14660 14665 14670
 Glu Val Ser Ser Asp Phe Val Thr Phe Ser Trp Asp Pro Pro Glu Asn
 14675 14680 14685
 Asp Gly Gly Val Pro Ile Ser Asn Tyr Val Val Glu Met Arg Gln Thr
 14690 14695 14700 1
 Asp Ser Thr Thr Trp Val Glu Leu Ala Thr Thr Val Ile Arg Thr Thr
 4705 14710 14715 14720
 Tyr Lys Ala Thr Arg Leu Thr Thr Gly Leu Glu Tyr Gln Phe Arg Val
 14725 14730 14735
 Lys Ala Gln Asn Arg Tyr Gly Val Gly Pro Gly Ile Thr Ser Ala Trp
 14740 14745 14750
 Ile Val Ala Asn Tyr Pro Phe Lys Val Pro Gly Pro Gly Thr Pro
 14755 14760 14765
 Gln Val Thr Ala Val Thr Lys Asp Ser Met Thr Ile Ser Trp His Glu
 14770 14775 14780 1
 Pro Leu Ser Asp Gly Gly Ser Pro Ile Leu Gly Tyr His Val Glu Arg
 4785 14790 14795 14800

Lys Glu Arg Asn Gly Ile Leu Trp Gln Thr Val Ser Lys Ala Leu Val
 14805 14810 14815
 Pro Gly Asn Ile Phe Lys Ser Ser Gly Leu Thr Asp Gly Ile Ala Tyr
 14820 14825 14830
 Glu Phe Arg Val Ile Ala Glu Asn Met Ala Gly Lys Ser Lys Pro Ser
 14835 14840 14845
 Lys Pro Ser Glu Pro Met Leu Ala Leu Asp Pro Ile Asp Pro Pro Gly
 14850 14855 14860 1
 Lys Pro Val Pro Leu Asn Ile Thr Arg His Thr Val Thr Leu Lys Trp
 4865 14870 14875 14880
 Ala Lys Pro Glu Tyr Thr Gly Gly Phe Lys Ile Thr Ser Tyr Ile Val
 14885 14890 14895
 Glu Lys Arg Asp Leu Pro Asn Gly Arg Trp Leu Lys Ala Asn Phe Ser
 14900 14905 14910
 Asn Ile Leu Glu Asn Glu Phe Thr Val Ser Gly Leu Thr Glu Asp Ala
 14915 14920 14925
 Ala Tyr Glu Phe Arg Val Ile Ala Lys Asn Ala Ala Gly Ala Ile Ser
 14930 14935 14940 1
 Pro Pro Ser Glu Pro Ser Asp Ala Ile Thr Cys Arg Asp Asp Val Glu
 4945 14950 14955 14960
 Ala Pro Lys Ile Lys Val Asp Val Lys Phe Lys Asp Thr Val Ile Leu
 14965 14970 14975
 Lys Ala Gly Glu Ala Phe Arg Leu Glu Ala Asp Val Ser Gly Arg Pro
 14980 14985 14990
 Pro Pro Thr Met Glu Trp Ser Lys Asp Gly Lys Glu Leu Glu Gly Thr
 14995 15000 15005
 Ala Lys Leu Glu Ile Lys Ile Ala Asp Phe Ser Thr Asn Leu Val Asn
 15010 15015 15020 1
 Lys Asp Ser Thr Arg Arg Asp Ser Gly Ala Tyr Thr Leu Thr Ala Thr
 5025 15030 15035 15040
 Asn Pro Gly Gly Phe Ala Lys His Ile Phe Asn Val Lys Val Leu Asp
 15045 15050 15055
 Arg Pro Gly Pro Pro Glu Gly Pro Leu Ala Val Thr Glu Val Thr Ser
 15060 15065 15070
 Glu Lys Cys Val Leu Ser Trp Phe Pro Pro Leu Asp Asp Gly Gly Ala
 15075 15080 15085
 Lys Ile Asp His Tyr Ile Val Gln Lys Arg Glu Thr Ser Arg Leu Ala
 15090 15095 15100 1
 Trp Thr Asn Val Ala Ser Glu Val Gln Val Thr Lys Leu Lys Val Thr
 5105 15110 15115 15120
 Lys Leu Leu Lys Gly Asn Glu Tyr Ile Phe Arg Val Met Ala Val Asn
 15125 15130 15135
 Lys Tyr Gly Val Gly Glu Pro Leu Glu Ser Glu Pro Val Leu Ala Val
 15140 15145 15150
 Asn Pro Tyr Gly Pro Pro Asp Pro Pro Lys Asn Pro Glu Val Thr Thr
 15155 15160 15165
 Ile Thr Lys Asp Ser Met Val Val Cys Trp Gly His Pro Asp Ser Asp
 15170 15175 15180 1
 Gly Gly Ser Glu Ile Ile Asn Tyr Ile Val Glu Arg Arg Asp Lys Ala
 5185 15190 15195 15200
 Gly Gln Arg Trp Ile Lys Cys Asn Lys Lys Thr Leu Thr Asp Leu Arg
 15205 15210 15215
 Tyr Lys Val Ser Gly Leu Thr Glu Gly His Glu Tyr Glu Phe Arg Ile
 15220 15225 15230
 Met Ala Glu Asn Ala Ala Gly Ile Ser Ala Pro Ser Pro Thr Ser Pro
 15235 15240 15245
 Phe Tyr Lys Ala Cys Asp Thr Val Phe Lys Pro Gly Pro Pro Gly Asn
 15250 15255 15260 1

Pro Arg Val Leu Asp Thr Ser Arg Ser Ser Ile Ser Ile Ala Trp Asn
 5265 15270 15275 15280
 Lys Pro Ile Tyr Asp Gly Gly Ser Glu Ile Thr Gly Tyr Met Val Glu
 15285 15290 15295
 Ile Ala Leu Pro Glu Glu Asp Glu Trp Gln Ile Val Thr Pro Pro Ala
 15300 15305 15310
 Gly Leu Lys Ala Thr Ser Tyr Thr Ile Thr Gly Leu Thr Glu Asn Gln
 15315 15320 15325
 Glu Tyr Lys Ile Arg Ile Tyr Ala Met Asn Ser Glu Gly Leu Gly Glu
 15330 15335 15340 1
 Pro Ala Leu Val Pro Gly Thr Pro Lys Ala Glu Asp Arg Met Leu Pro
 5345 15350 15355 15360
 Pro Glu Ile Glu Leu Asp Ala Asp Leu Arg Lys Val Val Thr Ile Arg
 15365 15370 15375
 Ala Cys Cys Thr Leu Arg Leu Phe Val Pro Ile Lys Gly Arg Pro Asp
 15380 15385 15390
 Pro Glu Val Lys Trp Ala Arg Asp His Gly Glu Ser Leu Asp Lys Ala
 15395 15400 15405
 Ser Ile Glu Ser Ala Ser Ser Tyr Thr Leu Leu Ile Val Gly Asn Val
 15410 15415 15420 1
 Asn Arg Phe Asp Ser Gly Lys Tyr Ile Leu Thr Val Glu Asn Ser Ser
 5425 15430 15435 15440
 Gly Ser Lys Ser Ala Phe Val Asn Val Arg Val Leu Asp Thr Pro Gly
 15445 15450 15455
 Pro Pro Gln Asp Leu Lys Val Lys Glu Val Thr Lys Thr Ser Val Thr
 15460 15465 15470
 Leu Thr Trp Asp Pro Pro Leu Leu Asp Gly Gly Ser Lys Ile Lys Asn
 15475 15480 15485
 Tyr Ile Val Glu Lys Arg Glu Ser Thr Arg Lys Ala Tyr Ser Thr Val
 15490 15495 15500 1
 Ala Thr Asn Cys His Lys Thr Ser Trp Lys Val Asp Gln Leu Gln Glu
 5505 15510 15515 15520
 Gly Cys Ser Tyr Tyr Phe Arg Val Leu Ala Glu Asn Glu Tyr Gly Ile
 15525 15530 15535
 Gly Leu Pro Ala Glu Thr Ala Glu Ser Val Lys Ala Ser Glu Arg Pro
 15540 15545 15550
 Leu Pro Pro Gly Lys Ile Thr Leu Met Asp Val Thr Arg Asn Ser Val
 15555 15560 15565
 Ser Leu Ser Trp Glu Lys Pro Glu His Asp Gly Gly Ser Arg Ile Leu
 15570 15575 15580 1
 Gly Tyr Ile Val Glu Met Gln Thr Lys Gly Ser Asp Lys Trp Ala Thr
 5585 15590 15595 15600
 Cys Ala Thr Val Lys Val Thr Glu Ala Thr Ile Thr Gly Leu Ile Gln
 15605 15610 15615
 Gly Glu Glu Tyr Ser Phe Arg Val Ser Ala Gln Asn Glu Lys Gly Ile
 15620 15625 15630
 Ser Asp Pro Arg Gln Leu Ser Val Pro Val Ile Ala Lys Asp Leu Val
 15635 15640 15645
 Ile Pro Pro Ala Phe Lys Leu Leu Phe Asn Thr Phe Thr Val Leu Ala
 15650 15655 15660 1
 Gly Glu Asp Leu Lys Val Asp Val Pro Phe Ile Gly Arg Pro Thr Pro
 5665 15670 15675 15680
 Ala Val Thr Trp His Lys Asp Asn Val Pro Leu Lys Gln Thr Thr Arg
 15685 15690 15695
 Val Asn Ala Glu Ser Thr Glu Asn Asn Ser Leu Leu Thr Ile Lys Asp
 15700 15705 15710
 Ala Cys Arg Glu Asp Val Gly His Tyr Val Val Lys Leu Thr Asn Ser
 15715 15720 15725

Ala Gly Glu Ala Ile Glu Thr Leu Asn Val Ile Val Leu Asp Lys Pro
 15730 15735 15740 1
 Gly Pro Pro Thr Gly Pro Val Lys Met Asp Glu Val Thr Ala Asp Ser
 5745 15750 15755 15760
 Ile Thr Leu Ser Trp Gly Pro Pro Lys Tyr Asp Gly Gly Ser Ser Ile
 15765 15770 15775
 Asn Asn Tyr Ile Val Glu Lys Arg Asp Thr Ser Thr Thr Thr Trp Gln
 15780 15785 15790
 Ile Val Ser Ala Thr Val Ala Arg Thr Thr Ile Lys Ala Cys Arg Leu
 15795 15800 15805
 Lys Thr Gly Cys Glu Tyr Gln Phe Arg Ile Ala Ala Glu Asn Arg Tyr
 15810 15815 15820 1
 Gly Lys Ser Thr Tyr Leu Asn Ser Glu Pro Thr Val Ala Gln Tyr Pro
 5825 15830 15835 15840
 Phe Lys Val Pro Gly Pro Pro Gly Thr Pro Val Val Thr Leu Ser Ser
 15845 15850 15855
 Arg Asp Ser Met Glu Val Gln Trp Asn Glu Pro Ile Ser Asp Gly Gly
 15860 15865 15870
 Ser Arg Val Ile Gly Tyr His Leu Glu Arg Lys Glu Arg Asn Ser Ile
 15875 15880 15885
 Leu Trp Val Lys Leu Asn Lys Thr Pro Ile Pro Gln Thr Lys Phe Lys
 15890 15895 15900 1
 Thr Thr Gly Leu Glu Glu Gly Val Glu Tyr Glu Phe Arg Val Ser Ala
 5905 15910 15915 15920
 Glu Asn Ile Val Gly Ile Gly Lys Pro Ser Lys Val Ser Glu Cys Tyr
 15925 15930 15935
 Val Ala Arg Asp Pro Cys Asp Pro Pro Gly Arg Pro Glu Ala Ile Ile
 15940 15945 15950
 Val Thr Arg Asn Ser Val Thr Leu Gln Trp Lys Lys Pro Thr Tyr Asp
 15955 15960 15965
 Gly Gly Ser Lys Ile Thr Gly Tyr Ile Val Glu Lys Lys Glu Leu Pro
 15970 15975 15980 1
 Glu Gly Arg Trp Met Lys Ala Ser Phe Thr Asn Ile Ile Asp Thr His
 5985 15990 15995 16000
 Phe Glu Val Thr Gly Leu Val Glu Asp His Arg Tyr Glu Phe Arg Val
 16005 16010 16015
 Ile Ala Arg Asn Ala Ala Gly Val Phe Ser Glu Pro Ser Glu Ser Thr
 16020 16025 16030
 Gly Ala Ile Thr Ala Arg Asp Glu Val Asp Pro Pro Arg Ile Ser Met
 16035 16040 16045
 Asp Pro Lys Tyr Lys Asp Thr Ile Val Val His Ala Gly Glu Ser Phe
 16050 16055 16060 1
 Lys Val Asp Ala Asp Ile Tyr Gly Lys Pro Ile Pro Thr Ile Gln Trp
 6065 16070 16075 16080
 Ile Lys Gly Asp Gln Glu Leu Ser Asn Thr Ala Arg Leu Glu Ile Lys
 16085 16090 16095
 Ser Thr Asp Phe Ala Thr Ser Leu Ser Val Lys Asp Ala Val Arg Val
 16100 16105 16110
 Asp Ser Gly Asn Tyr Ile Leu Lys Ala Lys Asn Val Ala Gly Glu Arg
 16115 16120 16125
 Ser Val Thr Val Asn Val Lys Val Leu Asp Arg Pro Gly Pro Pro Glu
 16130 16135 16140 1
 Gly Pro Val Val Ile Ser Gly Val Thr Ala Glu Lys Cys Thr Leu Ala
 6145 16150 16155 16160
 Trp Lys Pro Pro Leu Gln Asp Gly Gly Ser Asp Ile Ile Asn Tyr Ile
 16165 16170 16175
 Val Glu Arg Arg Glu Thr Ser Arg Leu Val Trp Thr Val Val Asp Ala
 16180 16185 16190

Asn Val Gln Thr Leu Ser Cys Lys Val Thr Lys Leu Leu Glu Gly Asn
 16195 16200 16205
 Glu Tyr Thr Phe Arg Ile Met Ala Val Asn Lys Tyr Gly Val Gly Glu
 16210 16215 16220 1
 Pro Leu Glu Ser Glu Pro Val Val Ala Lys Asn Pro Phe Val Val Pro
 6225 16230 16235 16240
 Asp Ala Pro Lys Ala Pro Glu Val Thr Thr Val Thr Lys Asp Ser Met
 16245 16250 16255
 Ile Val Val Trp Glu Arg Pro Ala Ser Asp Gly Gly Ser Glu Ile Leu
 16260 16265 16270
 Gly Tyr Val Leu Glu Lys Arg Asp Lys Glu Gly Ile Arg Trp Thr Arg
 16275 16280 16285
 Cys His Lys Arg Leu Ile Gly Glu Leu Arg Leu Arg Val Thr Gly Leu
 16290 16295 16300 1
 Ile Glu Asn His Asp Tyr Glu Phe Arg Val Ser Ala Glu Asn Ala Ala
 6305 16310 16315 16320
 Gly Leu Ser Glu Pro Ser Pro Pro Ser Ala Tyr Gln Lys Ala Cys Asp
 16325 16330 16335
 Pro Ile Tyr Lys Pro Gly Pro Pro Asn Asn Pro Lys Val Ile Asp Ile
 16340 16345 16350
 Thr Arg Ser Ser Val Phe Leu Ser Trp Ser Lys Pro Ile Tyr Asp Gly
 16355 16360 16365
 Gly Cys Glu Ile Gln Gly Tyr Ile Val Glu Lys Cys Asp Val Asn Val
 16370 16375 16380 1
 Gly Glu Trp Thr Met Cys Thr Pro Pro Thr Gly Ile Asn Lys Thr Asn
 6385 16390 16395 16400
 Ile Glu Val Glu Lys Leu Leu Glu Lys His Glu Tyr Asn Phe Arg Ile
 16405 16410 16415
 Cys Ala Ile Asn Lys Ala Gly Val Gly Glu His Ala Asp Val Pro Gly
 16420 16425 16430
 Pro Ile Ile Val Glu Glu Lys Leu Glu Ala Pro Asp Ile Asp Leu Asp
 16435 16440 16445
 Leu Glu Leu Arg Lys Ile Ile Asn Ile Arg Ala Gly Gly Ser Leu Arg
 16450 16455 16460 1
 Leu Phe Val Pro Ile Lys Gly Arg Pro Thr Pro Glu Val Lys Trp Gly
 6465 16470 16475 16480
 Lys Val Asp Gly Glu Ile Arg Asp Ala Ala Ile Ile Asp Val Thr Ser
 16485 16490 16495
 Ser Phe Thr Ser Leu Val Leu Asp Asn Val Asn Arg Tyr Asp Ser Gly
 16500 16505 16510
 Lys Tyr Thr Leu Thr Leu Glu Asn Ser Ser Gly Thr Lys Ser Ala Phe
 16515 16520 16525
 Val Thr Val Arg Val Leu Asp Thr Pro Ser Pro Val Asn Leu Lys
 16530 16535 16540 1
 Val Thr Glu Ile Thr Lys Asp Ser Val Ser Ile Thr Trp Glu Pro Pro
 6545 16550 16555 16560
 Leu Leu Asp Gly Gly Ser Lys Ile Lys Asn Tyr Ile Val Glu Lys Arg
 16565 16570 16575
 Glu Ala Thr Arg Lys Ser Tyr Ala Ala Val Val Thr Asn Cys His Lys
 16580 16585 16590
 Asn Ser Trp Lys Ile Asp Gln Leu Gln Glu Gly Cys Ser Tyr Tyr Phe
 16595 16600 16605
 Arg Val Thr Ala Glu Asn Glu Tyr Gly Ile Gly Leu Pro Ala Gln Thr
 16610 16615 16620 1
 Ala Asp Pro Ile Lys Val Ala Glu Val Pro Gln Pro Pro Gly Lys Ile
 6625 16630 16635 16640
 Thr Val Asp Asp Val Thr Arg Asn Ser Val Ser Leu Ser Trp Thr Lys
 16645 16650 16655

Pro Glu His Asp Gly Gly Ser Lys Ile Ile Gln Tyr Ile Val Glu Met
 16660 16665 16670
 Gln Ala Lys His Ser Glu Lys Trp Ser Glu Cys Ala Arg Val Lys Ser
 16675 16680 16685
 Leu Gln Ala Val Ile Thr Asn Leu Thr Gln Gly Glu Glu Tyr Leu Phe
 16690 16695 16700 1
 Arg Val Val Ala Val Asn Glu Lys Gly Arg Ser Asp Pro Arg Ser Leu
 6705 16710 16715 16720
 Ala Val Pro Ile Val Ala Lys Asp Leu Val Ile Glu Pro Asp Val Lys
 16725 16730 16735
 Pro Ala Phe Ser Ser Tyr Ser Val Gln Val Gly Gln Asp Leu Lys Ile
 16740 16745 16750
 Glu Val Pro Ile Ser Gly Arg Pro Lys Pro Thr Ile Thr Trp Thr Lys
 16755 16760 16765
 Asp Gly Leu Pro Leu Lys Gln Thr Thr Arg Ile Asn Val Thr Asp Ser
 16770 16775 16780 1
 Leu Asp Leu Thr Thr Leu Ser Ile Lys Glu Thr His Lys Asp Asp Gly
 6785 16790 16795 16800
 Gly Gln Tyr Gly Ile Thr Val Ala Asn Val Val Gly Gln Lys Thr Ala
 16805 16810 16815
 Ser Ile Glu Ile Val Thr Leu Asp Lys Pro Asp Pro Pro Lys Gly Pro
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 Val Lys Phe Asp Asp Val Ser Ala Glu Ser Ile Thr Leu Ser Trp Asn
 16835 16840 16845
 Pro Pro Leu Tyr Thr Gly Gly Cys Gln Ile Thr Asn Tyr Ile Val Gln
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 Lys Arg Asp Thr Thr Thr Val Trp Asp Val Val Ser Ala Thr Val
 6865 16870 16875 16880
 Ala Arg Thr Thr Leu Lys Val Thr Lys Leu Lys Thr Gly Thr Glu Tyr
 16885 16890 16895
 Gln Phe Arg Ile Phe Ala Glu Asn Arg Tyr Gly Gln Ser Phe Ala Leu
 16900 16905 16910
 Glu Ser Asp Pro Ile Val Ala Gln Tyr Pro Tyr Lys Glu Pro Gly Pro
 16915 16920 16925
 Pro Gly Thr Pro Phe Ala Thr Ala Ile Ser Lys Asp Ser Met Val Ile
 16930 16935 16940 1
 Gln Trp His Glu Pro Val Asn Asn Gly Gly Ser Pro Val Ile Gly Tyr
 6945 16950 16955 16960
 His Leu Glu Arg Lys Glu Arg Asn Ser Ile Leu Trp Thr Lys Val Asn
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 Lys Thr Ile Ile His Asp Thr Gln Phe Lys Ala Gln Asn Leu Glu Glu
 16980 16985 16990
 Gly Ile Glu Tyr Glu Phe Arg Val Tyr Ala Glu Asn Ile Val Gly Val
 16995 17000 17005
 Gly Lys Ala Ser Lys Asn Ser Glu Cys Tyr Val Ala Arg Asp Pro Cys
 17010 17015 17020 1
 Asp Pro Pro Gly Thr Pro Glu Pro Ile Met Val Lys Arg Asn Glu Ile
 7025 17030 17035 17040
 Thr Leu Gln Trp Thr Lys Pro Val Tyr Asp Gly Gly Ser Met Ile Thr
 17045 17050 17055
 Gly Tyr Ile Val Glu Lys Arg Asp Leu Pro Asp Gly Arg Trp Met Lys
 17060 17065 17070
 Ala Ser Phe Thr Asn Val Ile Glu Thr Gln Phe Thr Val Ser Gly Leu
 17075 17080 17085
 Thr Glu Asp Gln Arg Tyr Glu Phe Arg Val Ile Ala Lys Asn Ala Ala
 17090 17095 17100 1
 Gly Ala Ile Ser Lys Pro Ser Asp Ser Thr Gly Pro Ile Thr Ala Lys
 7105 17110 17115 17120

Asp Glu Val Glu Leu Pro Arg Ile Ser Met Asp Pro Lys Phe Arg Asp
 17125 17130 17135
 Thr Ile Val Val Asn Ala Gly Glu Thr Phe Arg Leu Glu Ala Asp Val
 17140 17145 17150
 His Gly Lys Pro Leu Pro Thr Ile Glu Trp Leu Arg Gly Asp Lys Glu
 17155 17160 17165
 Ile Glu Glu Ser Ala Arg Cys Glu Ile Lys Asn Thr Asp Phe Lys Ala
 17170 17175 17180 1
 Leu Leu Ile Val Lys Asp Ala Ile Arg Ile Asp Gly Gly Gln Tyr Ile
 7185 17190 17195 17200
 Leu Arg Ala Ser Asn Val Ala Gly Ser Lys Ser Phe Pro Val Asn Val
 17205 17210 17215
 Lys Val Leu Asp Arg Pro Gly Pro Pro Glu Gly Pro Val Gln Val Thr
 17220 17225 17230
 Gly Val Thr Ser Glu Lys Cys Ser Leu Thr Trp Ser Pro Pro Leu Gln
 17235 17240 17245
 Asp Gly Gly Ser Asp Ile Ser His Tyr Val Val Glu Lys Arg Glu Thr
 17250 17255 17260 1
 Ser Arg Leu Ala Trp Thr Val Val Ala Ser Glu Val Val Thr Asn Ser
 7265 17270 17275 17280
 Leu Lys Val Thr Lys Leu Leu Glu Gly Asn Glu Tyr Val Phe Arg Ile
 17285 17290 17295
 Met Ala Val Asn Lys Tyr Gly Val Gly Glu Pro Leu Glu Ser Ala Pro
 17300 17305 17310
 Val Leu Met Lys Asn Pro Phe Val Leu Pro Gly Pro Pro Lys Ser Leu
 17315 17320 17325
 Glu Val Thr Asn Ile Ala Lys Asp Ser Met Thr Val Cys Trp Asn Arg
 17330 17335 17340 1
 Pro Asp Ser Asp Gly Gly Ser Glu Ile Ile Gly Tyr Ile Val Glu Lys
 7345 17350 17355 17360
 Arg Asp Arg Ser Gly Ile Arg Trp Ile Lys Cys Asn Lys Arg Arg Ile
 17365 17370 17375
 Thr Asp Leu Arg Leu Arg Val Thr Gly Leu Thr Glu Asp His Glu Tyr
 17380 17385 17390
 Glu Phe Arg Val Ser Ala Glu Asn Ala Ala Gly Val Gly Glu Pro Ser
 17395 17400 17405
 Pro Ala Thr Val Tyr Tyr Lys Ala Cys Asp Pro Val Phe Lys Pro Gly
 17410 17415 17420 1
 Pro Pro Thr Asn Ala His Ile Val Asp Thr Thr Lys Asn Ser Ile Thr
 7425 17430 17435 17440
 Leu Ala Trp Gly Lys Pro Ile Tyr Asp Gly Gly Ser Glu Ile Leu Gly
 17445 17450 17455
 Tyr Val Val Glu Ile Cys Lys Ala Asp Glu Glu Glu Trp Gln Ile Val
 17460 17465 17470
 Thr Pro Gln Thr Gly Leu Arg Val Thr Arg Phe Glu Ile Ser Lys Leu
 17475 17480 17485
 Thr Glu His Gln Glu Tyr Lys Ile Arg Val Cys Ala Leu Asn Lys Val
 17490 17495 17500 1
 Gly Leu Gly Glu Ala Thr Ser Val Pro Gly Thr Val Lys Pro Glu Asp
 7505 17510 17515 17520
 Lys Leu Glu Ala Pro Glu Leu Asp Leu Asp Ser Glu Leu Arg Lys Gly
 17525 17530 17535
 Ile Val Val Arg Ala Gly Gly Ser Ala Arg Ile His Ile Pro Phe Lys
 17540 17545 17550
 Gly Arg Pro Met Pro Glu Ile Thr Trp Ser Arg Glu Glu Gly Glu Phe
 17555 17560 17565
 Thr Asp Lys Val Gln Ile Glu Lys Gly Val Asn Tyr Thr Gln Leu Ser
 17570 17575 17580 1

Ile Asp Asn Cys Asp Arg Asn Asp Ala Gly Lys Tyr Ile Leu Lys Leu
 7585 17590 17595 17600
 Glu Asn Ser Ser Gly Ser Lys Ser Ala Phe Val Thr Val Lys Val Leu
 17605 17610 17615
 Asp Thr Pro Gly Pro Pro Gln Asn Leu Ala Val Lys Glu Val Arg Lys
 17620 17625 17630
 Asp Ser Ala Phe Leu Val Trp Glu Pro Pro Ile Ile Asp Gly Gly Ala
 17635 17640 17645
 Lys Val Lys Asn Tyr Val Ile Asp Lys Arg Glu Ser Thr Arg Lys Ala
 17650 17655 17660 1
 Tyr Ala Asn Val Ser Ser Lys Cys Ser Lys Thr Ser Phe Lys Val Glu
 7665 17670 17675 17680
 Asn Leu Thr Glu Gly Ala Ile Tyr Tyr Phe Arg Val Met Ala Glu Asn
 17685 17690 17695
 Glu Phe Gly Val Gly Val Pro Val Glu Thr Val Asp Ala Val Lys Ala
 17700 17705 17710
 Ala Glu Pro Pro Ser Pro Pro Gly Lys Val Thr Leu Thr Asp Val Ser
 17715 17720 17725
 Gln Thr Ser Ala Ser Leu Met Trp Glu Lys Pro Glu His Asp Gly Gly
 17730 17735 17740 1
 Ser Arg Val Leu Gly Tyr Val Val Glu Met Gln Pro Lys Gly Thr Glu
 7745 17750 17755 17760
 Lys Trp Ser Ile Val Ala Glu Ser Lys Val Cys Asn Ala Val Val Thr
 17765 17770 17775
 Gly Leu Ser Ser Gly Gln Glu Tyr Gln Phe Arg Val Lys Ala Tyr Asn
 17780 17785 17790
 Glu Lys Gly Lys Ser Asp Pro Arg Val Leu Gly Val Pro Val Ile Ala
 17795 17800 17805
 Lys Asp Leu Thr Ile Gln Pro Ser Leu Lys Leu Pro Phe Asn Thr Tyr
 17810 17815 17820 1
 Ser Ile Gln Ala Gly Glu Asp Leu Lys Ile Glu Ile Pro Val Ile Gly
 7825 17830 17835 17840
 Arg Pro Arg Pro Asn Ile Ser Trp Val Lys Asp Gly Glu Pro Leu Lys
 17845 17850 17855
 Gln Thr Thr Arg Val Asn Val Glu Glu Thr Ala Thr Ser Thr Val Leu
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 His Ile Lys Glu Gly Asn Lys Asp Asp Phe Gly Lys Tyr Thr Val Thr
 17875 17880 17885
 Ala Thr Asn Ser Ala Gly Thr Ala Thr Glu Asn Leu Ser Val Ile Val
 17890 17895 17900 1
 Leu Glu Lys Pro Gly Pro Pro Val Gly Pro Val Arg Phe Asp Glu Val
 7905 17910 17915 17920
 Ser Ala Asp Phe Val Val Ile Ser Trp Glu Pro Pro Ala Tyr Thr Gly
 17925 17930 17935
 Gly Cys Gln Ile Ser Asn Tyr Ile Val Glu Lys Arg Asp Thr Thr Thr
 17940 17945 17950
 Thr Thr Trp His Met Val Ser Ala Thr Val Ala Arg Thr Thr Ile Lys
 17955 17960 17965
 Ile Thr Lys Leu Lys Thr Gly Thr Glu Tyr Gln Phe Arg Ile Phe Ala
 17970 17975 17980 1
 Glu Asn Arg Tyr Gly Lys Ser Ala Pro Leu Asp Ser Lys Ala Val Ile
 7985 17990 17995 18000
 Val Gln Tyr Pro Phe Lys Glu Pro Gly Pro Gly Thr Pro Phe Val
 18005 18010 18015
 Thr Ser Ile Ser Lys Asp Gln Met Leu Val Gln Trp His Glu Pro Val
 18020 18025 18030
 Asn Asp Gly Gly Thr Lys Ile Ile Gly Tyr His Leu Glu Gln Lys Glu
 18035 18040 18045

Lys Asn Ser Ile Leu Trp Val Lys Leu Asn Lys Thr Pro Ile Gln Asp 1
 18050 18055 18060
 Thr Lys Phe Lys Thr Thr Gly Leu Asp Glu Gly Leu Glu Tyr Glu Phe
 8065 18070 18075 18080
 Lys Val Ser Ala Glu Asn Ile Val Gly Ile Gly Lys Pro Ser Lys Val
 18085 18090 18095
 Ser Glu Cys Phe Val Ala Arg Asp Pro Cys Asp Pro Pro Gly Arg Pro
 18100 18105 18110
 Glu Ala Ile Val Ile Thr Arg Asn Asn Val Thr Leu Lys Trp Lys Lys
 18115 18120 18125
 Pro Ala Tyr Asp Gly Gly Ser Lys Ile Thr Gly Tyr Ile Val Glu Lys
 18130 18135 18140 1
 Lys Asp Leu Pro Asp Gly Arg Trp Met Lys Ala Ser Phe Thr Asn Val
 8145 18150 18155 18160
 Leu Glu Thr Glu Phe Thr Val Ser Gly Leu Val Glu Asp Gln Arg Tyr
 18165 18170 18175
 Glu Phe Arg Val Ile Ala Arg Asn Ala Ala Gly Asn Phe Ser Glu Pro
 18180 18185 18190
 Ser Asp Ser Ser Gly Ala Ile Thr Ala Arg Asp Glu Ile Asp Ala Pro
 18195 18200 18205
 Asn Ala Ser Leu Asp Pro Lys Tyr Lys Asp Val Ile Val Val His Ala
 18210 18215 18220 1
 Gly Glu Thr Phe Val Leu Glu Ala Asp Ile Arg Gly Lys Pro Ile Pro
 8225 18230 18235 18240
 Asp Val Val Trp Ser Lys Asp Gly Lys Glu Leu Glu Glu Thr Ala Ala
 18245 18250 18255
 Arg Met Glu Ile Lys Ser Thr Ile Gln Lys Thr Thr Leu Val Val Lys
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 Asp Cys Ile Arg Thr Asp Gly Gly Gln Tyr Ile Leu Lys Leu Ser Asn
 18275 18280 18285
 Val Gly Gly Thr Lys Ser Ile Pro Ile Thr Val Lys Val Leu Asp Arg
 18290 18295 18300 1
 Pro Gly Ser Pro Glu Gly Pro Leu Lys Val Thr Gly Val Thr Ala Glu
 8305 18310 18315 18320
 Lys Cys Tyr Leu Ala Trp Asn Pro Pro Leu Gln Asp Gly Gly Ala Asn
 18325 18330 18335
 Ile Ser His Tyr Ile Ile Glu Lys Arg Glu Thr Ser Arg Leu Ser Trp
 18340 18345 18350
 Thr Gln Val Ser Thr Glu Val Gln Ala Leu Asn Tyr Lys Val Thr Lys
 18355 18360 18365
 Leu Leu Pro Gly Asn Glu Tyr Ile Phe Arg Val Met Ala Val Asn Lys
 18370 18375 18380 1
 Tyr Gly Ile Gly Glu Pro Leu Glu Ser Gly Pro Val Thr Ala Cys Asn
 8385 18390 18395 18400
 Pro Tyr Lys Pro Pro Gly Pro Pro Ser Thr Pro Glu Val Ser Ala Ile
 18405 18410 18415
 Thr Lys Asp Ser Met Val Val Thr Trp Ala Arg Pro Val Asp Asp Gly
 18420 18425 18430
 Gly Thr Glu Ile Glu Gly Tyr Ile Leu Glu Lys Arg Asp Lys Glu Gly
 18435 18440 18445
 Val Arg Trp Thr Lys Cys Asn Lys Lys Thr Leu Thr Asp Leu Arg Leu
 18450 18455 18460 1
 Arg Val Thr Gly Leu Thr Glu Gly His Ser Tyr Glu Phe Arg Val Ala
 8465 18470 18475 18480
 Ala Glu Asn Ala Ala Gly Val Gly Glu Pro Ser Glu Pro Ser Val Phe
 18485 18490 18495
 Tyr Arg Ala Cys Asp Ala Leu Tyr Pro Pro Gly Pro Pro Ser Asn Pro
 18500 18505 18510

Lys Val Thr Asp Thr Ser Arg Ser Ser Val Ser Leu Ala Trp Ser Lys
 18515 18520 18525
 Pro Ile Tyr Asp Gly Gly Ala Pro Val Lys Gly Tyr Val Val Glu Val
 18530 18535 18540 1
 Lys Glu Ala Ala Ala Asp Glu Trp Thr Thr Cys Thr Pro Pro Thr Gly
 8545 18550 18555 18560
 Leu Gln Gly Lys Gln Phe Thr Val Thr Lys Leu Lys Glu Asn Thr Glu
 18565 18570 18575
 Tyr Asn Phe Arg Ile Cys Ala Ile Asn Ser Glu Gly Val Gly Glu Pro
 18580 18585 18590
 Ala Thr Leu Pro Gly Ser Val Val Ala Gln Glu Arg Ile Glu Pro Pro
 18595 18600 18605
 Glu Ile Glu Leu Asp Ala Asp Leu Arg Lys Val Val Val Leu Arg Ala
 18610 18615 18620 1
 Ser Ala Thr Leu Arg Leu Phe Val Thr Ile Lys Gly Arg Pro Glu Pro
 8625 18630 18635 18640
 Glu Val Lys Trp Glu Lys Ala Glu Gly Ile Leu Thr Asp Arg Ala Gln
 18645 18650 18655
 Ile Glu Val Thr Ser Ser Phe Thr Met Leu Val Ile Asp Asn Val Thr
 18660 18665 18670
 Arg Phe Asp Ser Gly Arg Tyr Asn Leu Thr Leu Glu Asn Asn Ser Gly
 18675 18680 18685
 Ser Lys Thr Ala Phe Val Asn Val Arg Val Leu Asp Ser Pro Ser Ala
 18690 18695 18700 1
 Pro Val Asn Leu Thr Ile Arg Glu Val Lys Lys Asp Ser Val Thr Leu
 8705 18710 18715 18720
 Ser Trp Glu Pro Pro Leu Ile Asp Gly Gly Ala Lys Ile Thr Asn Tyr
 18725 18730 18735
 Ile Val Glu Lys Arg Glu Thr Thr Arg Lys Ala Tyr Ala Thr Ile Thr
 18740 18745 18750
 Asn Asn Cys Thr Lys Thr Thr Phe Arg Ile Glu Asn Leu Gln Glu Gly
 18755 18760 18765
 Cys Ser Tyr Tyr Phe Arg Val Leu Ala Ser Asn Glu Tyr Gly Ile Gly
 18770 18775 18780 1
 Leu Pro Ala Glu Thr Thr Glu Pro Val Lys Val Ser Glu Pro Pro Leu
 8785 18790 18795 18800
 Pro Pro Gly Arg Val Thr Leu Val Asp Val Thr Arg Asn Thr Ala Thr
 18805 18810 18815
 Ile Lys Trp Glu Lys Pro Glu Ser Asp Gly Gly Ser Lys Ile Thr Gly
 18820 18825 18830
 Tyr Val Val Glu Met Gln Thr Lys Gly Ser Glu Lys Trp Ser Thr Cys
 18835 18840 18845
 Thr Gln Val Lys Thr Leu Glu Ala Thr Ile Ser Gly Leu Thr Ala Gly
 18850 18855 18860 1
 Glu Glu Tyr Val Phe Arg Val Ala Ala Val Asn Glu Lys Gly Arg Ser
 8865 18870 18875 18880
 Asp Pro Arg Gln Leu Gly Val Pro Val Ile Ala Arg Asp Ile Glu Ile
 18885 18890 18895
 Lys Pro Ser Val Glu Leu Pro Phe His Thr Phe Asn Val Lys Ala Arg
 18900 18905 18910
 Glu Gln Leu Lys Ile Asp Val Pro Phe Lys Gly Arg Pro Gln Ala Thr
 18915 18920 18925
 Val Asn Trp Arg Lys Asp Gly Gln Thr Leu Lys Glu Thr Thr Arg Val
 18930 18935 18940 1
 Asn Val Ser Ser Ser Lys Thr Val Thr Ser Leu Ser Ile Lys Glu Ala
 8945 18950 18955 18960
 Ser Lys Glu Asp Val Gly Thr Tyr Glu Leu Cys Val Ser Asn Ser Ala
 18965 18970 18975

Gly Ser Ile Thr Val Pro Ile Thr Ile Ile Val Leu Asp Arg Pro Gly
 18980 18985 18990
 Pro Pro Gly Pro Ile Arg Ile Asp Glu Val Ser Cys Asp Ser Ile Thr
 18995 19000 19005
 Ile Ser Trp Asn Pro Pro Glu Tyr Asp Gly Gly Cys Gln Ile Ser Asn
 19010 19015 19020 1
 Tyr Ile Val Glu Lys Lys Glu Thr Thr Ser Thr Thr Trp His Ile Val
 9025 19030 19035 19040
 Ser Gln Ala Val Ala Arg Thr Ser Ile Lys Ile Val Arg Leu Thr Thr
 19045 19050 19055
 Gly Ser Glu Tyr Gln Phe Arg Val Cys Ala Glu Asn Arg Tyr Gly Lys
 19060 19065 19070
 Ser Ser Tyr Ser Glu Ser Ser Ala Val Val Ala Glu Tyr Pro Phe Ser
 19075 19080 19085
 Pro Pro Gly Pro Pro Gly Thr Pro Lys Val Val His Ala Thr Lys Ser
 19090 19095 19100 1
 Thr Met Leu Val Thr Trp Gln Val Pro Val Asn Asp Gly Gly Ser Arg
 9105 19110 19115 19120
 Val Ile Gly Tyr His Leu Glu Tyr Lys Glu Arg Ser Ser Ile Leu Trp
 19125 19130 19135
 Ser Lys Ala Asn Lys Ile Leu Ile Ala Asp Thr Gln Val Lys Val Ser
 19140 19145 19150
 Gly Leu Asp Glu Gly Leu Met Tyr Glu Tyr Arg Val Tyr Ala Glu Asn
 19155 19160 19165
 Ile Ala Gly Ile Gly Lys Cys Ser Lys Ser Cys Glu Pro Val Pro Ala
 19170 19175 19180 1
 Arg Asp Pro Cys Asp Pro Pro Gly Gln Pro Glu Val Thr Asn Ile Thr
 9185 19190 19195 19200
 Arg Lys Ser Val Ser Leu Lys Trp Ser Lys Pro His Tyr Asp Gly Gly
 19205 19210 19215
 Ala Lys Ile Thr Gly Tyr Ile Val Glu Arg Arg Glu Leu Pro Asp Gly
 19220 19225 19230
 Arg Trp Leu Lys Cys Asn Tyr Thr Asn Ile Gln Glu Thr Tyr Phe Glu
 19235 19240 19245
 Val Thr Glu Leu Thr Glu Asp Gln Arg Tyr Glu Phe Arg Val Phe Ala
 19250 19255 19260 1
 Arg Asn Ala Ala Asp Ser Val Ser Glu Pro Ser Glu Ser Thr Gly Pro
 9265 19270 19275 19280
 Ile Ile Val Lys Asp Asp Val Glu Pro Pro Arg Val Met Met Asp Val
 19285 19290 19295
 Lys Phe Arg Asp Val Ile Val Val Lys Ala Gly Glu Val Leu Lys Ile
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 Asn Ala Asp Ile Ala Gly Arg Pro Leu Pro Val Ile Ser Trp Ala Lys
 19315 19320 19325
 Asp Gly Ile Glu Ile Glu Glu Arg Ala Arg Thr Glu Ile Ile Ser Thr
 19330 19335 19340 1
 Asp Asn His Thr Leu Leu Thr Val Lys Asp Cys Ile Arg Arg Asp Thr
 9345 19350 19355 19360
 Gly Gln Tyr Val Leu Thr Leu Lys Asn Val Ala Gly Thr Arg Ser Val
 19365 19370 19375
 Ala Val Asn Cys Lys Val Leu Asp Lys Pro Gly Pro Pro Ala Gly Pro
 19380 19385 19390
 Leu Glu Ile Asn Gly Leu Thr Ala Glu Lys Cys Ser Leu Ser Trp Gly
 19395 19400 19405
 Arg Pro Gln Glu Asp Gly Gly Ala Asp Ile Asp Tyr Tyr His Arg Lys
 19410 19415 19420 1
 Lys Arg Glu Thr Ser His Leu Ala Trp Thr Ile Cys Glu Gly Glu Leu
 9425 19430 19435 19440

Gln Met Thr Ser Cys Lys Val Thr Lys Leu Leu Lys Gly Asn Glu Tyr
 19445 19450 19455
 Ile Phe Arg Val Thr Gly Val Asn Lys Tyr Gly Val Gly Glu Pro Leu
 19460 19465 19470
 Glu Ser Val Ala Ile Lys Ala Leu Asp Pro Phe Thr Val Pro Ser Pro
 19475 19480 19485
 Pro Thr Ser Leu Glu Ile Thr Ser Val Thr Lys Glu Ser Met Thr Leu
 19490 19495 19500 1
 Cys Trp Ser Arg Pro Glu Ser Asp Gly Gly Ser Glu Ile Ser Gly Tyr
 9505 19510 19515 19520
 Ile Ile Glu Arg Arg Glu Lys Asn Ser Leu Arg Trp Val Arg Val Asn
 19525 19530 19535
 Lys Lys Pro Val Tyr Asp Leu Arg Val Lys Ser Thr Gly Leu Arg Glu
 19540 19545 19550
 Gly Cys Glu Tyr Glu Tyr Arg Val Tyr Ala Glu Asn Ala Ala Gly Leu
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 Ser Leu Pro Ser Glu Thr Ser Pro Leu Ile Arg Ala Glu Asp Pro Val
 19570 19575 19580 1
 Phe Leu Pro Ser Pro Pro Ser Lys Pro Lys Ile Val Asp Ser Gly Lys
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 Thr Thr Ile Thr Ile Ala Trp Val Lys Pro Leu Phe Asp Gly Gly Ala
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 Pro Ile Thr Gly Tyr Thr Val Glu Tyr Lys Lys Ser Asp Asp Thr Asp
 19620 19625 19630
 Trp Lys Thr Ser Ile Gln Ser Leu Arg Gly Thr Glu Tyr Thr Ile Ser
 19635 19640 19645
 Gly Leu Thr Thr Gly Ala Glu Tyr Val Phe Arg Val Lys Ser Val Asn
 19650 19655 19660 1
 Lys Val Gly Ala Ser Asp Pro Ser Asp Ser Ser Asp Pro Gln Ile Ala
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 Lys Glu Arg Glu Glu Glu Pro Leu Phe Asp Ile Asp Ser Glu Met Arg
 19685 19690 19695
 Lys Thr Leu Ile Val Lys Ala Gly Ala Ser Phe Thr Met Thr Val Pro
 19700 19705 19710
 Phe Arg Gly Arg Pro Val Pro Asn Val Leu Trp Ser Lys Pro Asp Thr
 19715 19720 19725
 Asp Leu Arg Thr Arg Ala Tyr Val Asp Thr Thr Asp Ser Arg Thr Ser
 19730 19735 19740 1
 Leu Thr Ile Glu Asn Ala Asn Arg Asn Asp Ser Gly Lys Tyr Thr Leu
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 Thr Ile Gln Asn Val Leu Ser Ala Ala Ser Leu Thr Leu Val Val Lys
 19765 19770 19775
 Val Leu Asp Thr Pro Gly Pro Pro Thr Asn Ile Thr Val Gln Asp Val
 19780 19785 19790
 Thr Lys Glu Ser Ala Val Leu Ser Trp Asp Val Pro Glu Asn Asp Gly
 19795 19800 19805
 Gly Ala Pro Val Lys Asn Tyr His Ile Glu Lys Arg Glu Ala Ser Lys
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 Lys Ala Trp Val Ser Val Thr Asn Asn Cys Asn Arg Leu Ser Tyr Lys
 9825 19830 19835 19840
 Val Thr Asn Leu Gln Glu Gly Ala Ile Tyr Tyr Phe Arg Val Ser Gly
 19845 19850 19855
 Glu Asn Glu Phe Gly Val Gly Ile Pro Ala Glu Thr Lys Glu Gly Val
 19860 19865 19870
 Lys Ile Thr Glu Lys Pro Ser Pro Pro Glu Lys Leu Gly Val Thr Ser
 19875 19880 19885
 Ile Ser Lys Asp Ser Val Ser Leu Thr Trp Leu Lys Pro Glu His Asp
 19890 19895 19900 1

Gly Gly Ser Arg Ile Val His Tyr Val Val Glu Ala Leu Glu Lys Gly
 9905 19910 19915 19920
 Gln Lys Asn Trp Val Lys Cys Ala Val Ala Lys Ser Thr His His Val
 19925 19930 19935
 Val Ser Gly Leu Arg Glu Asn Ser Glu Tyr Phe Phe Arg Val Phe Ala
 19940 19945 19950
 Glu Asn Gln Ala Gly Leu Ser Asp Pro Arg Glu Leu Leu Leu Pro Val
 19955 19960 19965
 Leu Ile Lys Glu Gln Leu Glu Pro Pro Glu Ile Asp Met Lys Asn Phe
 19970 19975 19980 1
 Pro Ser His Thr Val Tyr Val Arg Ala Gly Ser Asn Leu Lys Val Asp
 9985 19990 19995 20000
 Ile Pro Ile Ser Gly Lys Pro Leu Pro Lys Val Thr Leu Ser Arg Asp
 20005 20010 20015
 Gly Val Pro Leu Lys Ala Thr Met Arg Phe Asn Thr Glu Ile Thr Ala
 20020 20025 20030
 Glu Asn Leu Thr Ile Asn Leu Lys Glu Ser Val Thr Ala Asp Ala Gly
 20035 20040 20045
 Arg Tyr Glu Ile Thr Ala Ala Asn Ser Ser Gly Thr Thr Lys Ala Phe
 20050 20055 20060 2
 Ile Asn Ile Val Val Leu Asp Arg Pro Gly Pro Pro Thr Gly Pro Val
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 Val Ile Ser Asp Ile Thr Glu Glu Ser Val Thr Leu Lys Trp Glu Pro
 20085 20090 20095
 Pro Lys Tyr Asp Gly Gly Ser Gln Val Thr Asn Tyr Ile Leu Leu Lys
 20100 20105 20110
 Arg Glu Thr Ser Thr Ala Val Trp Thr Glu Val Ser Ala Thr Val Ala
 20115 20120 20125
 Arg Thr Met Met Lys Val Met Lys Leu Thr Thr Gly Glu Glu Tyr Gln
 20130 20135 20140 2
 Phe Arg Ile Lys Ala Glu Asn Arg Phe Gly Ile Ser Asp His Ile Asp
 0145 20150 20155 20160
 Ser Ala Cys Val Thr Val Lys Leu Pro Tyr Thr Thr Pro Gly Pro Pro
 20165 20170 20175
 Ser Thr Pro Trp Val Thr Asn Val Thr Arg Glu Ser Ile Thr Val Gly
 20180 20185 20190
 Trp His Glu Pro Val Ser Asn Gly Gly Ser Ala Val Val Gly Tyr His
 20195 20200 20205
 Leu Glu Met Lys Asp Arg Asn Ser Ile Leu Trp Gln Lys Ala Asn Lys
 20210 20215 20220 2
 Leu Val Ile Arg Thr Thr His Phe Lys Val Thr Thr Ile Ser Ala Gly
 0225 20230 20235 20240
 Leu Ile Tyr Glu Phe Arg Val Tyr Ala Glu Asn Ala Ala Gly Val Gly
 20245 20250 20255
 Lys Pro Ser His Pro Ser Glu Pro Val Leu Ala Ile Asp Ala Cys Glu
 20260 20265 20270
 Pro Pro Arg Asn Val Arg Ile Thr Asp Ile Ser Lys Asn Ser Val Ser
 20275 20280 20285
 Leu Ser Trp Gln Gln Pro Ala Phe Asp Gly Gly Ser Lys Ile Thr Gly
 20290 20295 20300 2
 Tyr Ile Val Glu Arg Arg Asp Leu Pro Asp Gly Arg Trp Thr Lys Ala
 0305 20310 20315 20320
 Ser Phe Thr Asn Val Thr Glu Thr Gln Phe Thr Ile Ser Gly Leu Thr
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 Gln Asn Ser Gln Tyr Glu Phe Arg Val Phe Ala Arg Asn Ala Val Gly
 20340 20345 20350
 Ser Ile Ser Asn Pro Ser Glu Val Val Gly Pro Ile Thr Cys Ile Asp
 20355 20360 20365

Ser Tyr Gly Gly Pro Val Ile Asp Leu Pro Leu Glu Tyr Thr Glu Val
 20370 20375 20380 2
 Val Lys Tyr Arg Ala Gly Thr Ser Val Lys Leu Arg Ala Gly Ile Ser
 0385 20390 20395 20400
 Gly Lys Pro Ala Pro Thr Ile Glu Trp Tyr Lys Asp Asp Lys Glu Leu
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 Gln Thr Asn Ala Leu Val Cys Val Glu Asn Thr Thr Asp Leu Ala Ser
 20420 20425 20430
 Ile Leu Ile Lys Asp Ala Asp Arg Leu Asn Ser Gly Cys Tyr Glu Leu
 20435 20440 20445
 Lys Leu Arg Asn Ala Met Ala Ser Ala Ser Ala Thr Ile Arg Val Gln
 20450 20455 20460 2
 Ile Leu Asp Lys Pro Gly Pro Pro Gly Gly Pro Ile Glu Phe Lys Thr
 0465 20470 20475 20480
 Val Thr Ala Glu Lys Ile Thr Leu Leu Trp Arg Pro Pro Ala Asp Asp
 20485 20490 20495
 Gly Gly Ala Lys Ile Thr His Tyr Ile Val Glu Lys Arg Glu Thr Ser
 20500 20505 20510
 Arg Val Val Trp Ser Met Val Ser Glu His Leu Glu Glu Cys Ile Ile
 20515 20520 20525
 Thr Thr Thr Lys Ile Ile Lys Gly Asn Glu Tyr Ile Phe Arg Val Arg
 20530 20535 20540 2
 Ala Val Asn Lys Tyr Gly Ile Gly Glu Pro Leu Glu Ser Asp Ser Val
 0545 20550 20555 20560
 Val Ala Lys Asn Ala Phe Val Thr Pro Gly Pro Pro Gly Ile Pro Glu
 20565 20570 20575
 Val Thr Lys Ile Thr Lys Asn Ser Met Thr Val Val Trp Ser Arg Pro
 20580 20585 20590
 Ile Ala Asp Gly Gly Ser Asp Ile Ser Gly Tyr Phe Leu Glu Lys Arg
 20595 20600 20605
 Asp Lys Lys Ser Leu Gly Trp Phe Lys Val Leu Lys Glu Thr Ile Arg
 20610 20615 20620 2
 Asp Thr Arg Gln Lys Val Thr Gly Leu Thr Glu Asn Ser Asp Tyr Gln
 0625 20630 20635 20640
 Tyr Arg Val Cys Ala Val Asn Ala Ala Gly Gln Gly Pro Phe Ser Glu
 20645 20650 20655
 Pro Ser Glu Phe Tyr Lys Ala Ala Asp Pro Ile Asp Pro Pro Gly Pro
 20660 20665 20670
 Pro Ala Lys Ile Arg Ile Ala Asp Ser Thr Lys Ser Ser Ile Thr Leu
 20675 20680 20685
 Gly Trp Ser Lys Pro Val Tyr Asp Gly Gly Ser Ala Val Thr Gly Tyr
 20690 20695 20700 2
 Val Val Glu Ile Arg Gln Gly Glu Glu Glu Glu Trp Thr Thr Val Ser
 0705 20710 20715 20720
 Thr Lys Gly Glu Val Arg Thr Thr Glu Tyr Val Val Ser Asn Leu Lys
 20725 20730 20735
 Pro Gly Val Asn Tyr Tyr Phe Arg Val Ser Ala Val Asn Cys Ala Gly
 20740 20745 20750
 Gln Gly Glu Pro Ile Glu Met Asn Glu Pro Val Gln Ala Lys Asp Ile
 20755 20760 20765
 Leu Glu Ala Pro Glu Ile Asp Leu Asp Val Ala Leu Arg Thr Ser Val
 20770 20775 20780 2
 Ile Ala Lys Ala Gly Glu Asp Val Gln Val Leu Ile Pro Phe Lys Gly
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 Arg Pro Pro Pro Thr Val Thr Trp Arg Lys Asp Glu Lys Asn Leu Gly
 20805 20810 20815
 Ser Asp Ala Arg Tyr Ser Ile Glu Asn Thr Asp Ser Ser Ser Leu Leu
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Thr Ile Pro Gln Val Thr Arg Asn Asp Thr Gly Lys Tyr Ile Leu Thr
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 Ile Glu Asn Gly Val Gly Glu Pro Lys Ser Ser Thr Val Ser Val Lys
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 Val Leu Asp Thr Pro Ala Ala Cys Gln Lys Leu Gln Val Lys His Val
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 Ser Arg Gly Thr Val Thr Leu Leu Trp Asp Pro Pro Leu Ile Asp Gly
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 Gly Ser Pro Ile Ile Asn Tyr Val Ile Glu Lys Arg Asp Ala Thr Lys
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 Arg Thr Trp Ser Val Val Ser His Lys Cys Ser Ser Thr Ser Phe Lys
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 Leu Ile Asp Leu Ser Glu Lys Thr Pro Phe Phe Phe Arg Val Leu Ala
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 Glu Asn Glu Ile Gly Ile Gly Glu Pro Cys Glu Thr Thr Glu Pro Val
 0945 20950 20955 20960
 Lys Ala Ala Glu Val Pro Ala Pro Ile Arg Asp Leu Ser Met Lys Asp
 20965 20970 20975
 Ser Thr Lys Thr Ser Val Ile Leu Ser Trp Thr Lys Pro Asp Phe Asp
 20980 20985 20990
 Gly Gly Ser Val Ile Thr Glu Tyr Val Val Glu Arg Lys Gly Lys Gly
 20995 21000 21005
 Glu Gln Thr Trp Ser His Ala Gly Ile Ser Lys Thr Cys Glu Ile Glu
 21010 21015 21020 2
 Val Ser Gln Leu Lys Glu Gln Ser Val Leu Glu Phe Arg Val Phe Ala
 1025 21030 21035 21040
 Lys Asn Glu Lys Gly Leu Ser Asp Pro Val Thr Ile Gly Pro Ile Thr
 21045 21050 21055
 Val Lys Glu Leu Ile Ile Thr Pro Glu Val Asp Leu Ser Asp Ile Pro
 21060 21065 21070
 Gly Ala Gln Val Thr Val Arg Ile Gly His Asn Val His Leu Glu Leu
 21075 21080 21085
 Pro Tyr Lys Gly Lys Pro Lys Pro Ser Ile Ser Trp Leu Lys Asp Gly
 21090 21095 21100 2
 Leu Pro Leu Lys Glu Ser Glu Phe Val Arg Phe Ser Lys Thr Glu Asn
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 Lys Ile Thr Leu Ser Ile Lys Asn Ala Lys Lys Glu His Gly Gly Lys
 21125 21130 21135
 Tyr Thr Val Ile Leu Asp Asn Ala Val Cys Arg Ile Ala Val Pro Ile
 21140 21145 21150
 Thr Val Ile Thr Leu Gly Pro Pro Ser Lys Pro Lys Gly Pro Ile Arg
 21155 21160 21165
 Phe Asp Glu Ile Lys Ala Asp Ser Val Ile Leu Ser Trp Asp Val Pro
 21170 21175 21180 2
 Glu Asp Asn Gly Gly Gly Glu Ile Thr Cys Tyr Ser Ile Glu Lys Arg
 1185 21190 21195 21200
 Glu Thr Ser Gln Thr Asn Trp Lys Met Val Cys Ser Ser Val Ala Arg
 21205 21210 21215
 Thr Thr Phe Lys Val Pro Asn Leu Val Lys Asp Ala Glu Tyr Gln Phe
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 Arg Val Arg Ala Glu Asn Arg Tyr Gly Val Ser Gln Pro Leu Val Ser
 21235 21240 21245
 Ser Ile Ile Val Ala Lys His Gln Phe Arg Ile Pro Gly Pro Pro Gly
 21250 21255 21260 2
 Lys Pro Val Ile Tyr Asn Val Thr Ser Asp Gly Met Ser Leu Thr Trp
 1265 21270 21275 21280
 Asp Ala Pro Val Tyr Asp Gly Gly Ser Glu Val Thr Gly Phe His Val
 21285 21290 21295

Glu Lys Lys Glu Arg Asn Ser Ile Leu Trp Gln Lys Val Asn Thr Ser
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 Pro Ile Ser Gly Arg Glu Tyr Arg Ala Thr Gly Leu Val Glu Gly Leu
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 Asp Tyr Gln Phe Arg Val Tyr Ala Glu Asn Ser Ala Gly Leu Ser Ser
 21330 21335 21340 2
 Pro Ser Asp Pro Ser Lys Phe Thr Leu Ala Val Ser Pro Val Asp Pro
 1345 21350 21355 21360
 Pro Gly Thr Pro Asp Tyr Ile Asp Val Thr Arg Glu Thr Ile Thr Leu
 21365 21370 21375
 Lys Trp Asn Pro Pro Leu Arg Asp Gly Gly Ser Lys Ile Val Gly Tyr
 21380 21385 21390
 Ser Ile Glu Lys Arg Gln Gly Asn Glu Arg Trp Val Arg Cys Asn Phe
 21395 21400 21405
 Thr Asp Val Ser Glu Cys Gln Tyr Thr Val Thr Gly Leu Ser Pro Gly
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 Asp Arg Tyr Glu Phe Arg Ile Ile Ala Arg Asn Ala Val Gly Thr Ile
 1425 21430 21435 21440
 Ser Pro Pro Ser Gln Ser Ser Gly Ile Ile Met Thr Arg Asp Glu Asn
 21445 21450 21455
 Val Pro Pro Ile Val Glu Phe Gly Pro Glu Tyr Phe Asp Gly Leu Ile
 21460 21465 21470
 Ile Lys Ser Gly Glu Ser Leu Arg Ile Lys Ala Leu Val Gln Gly Arg
 21475 21480 21485
 Pro Val Pro Arg Val Thr Trp Phe Lys Asp Gly Val Glu Ile Glu Lys
 21490 21495 21500 2
 Arg Met Asn Met Glu Ile Thr Asn Val Leu Gly Ser Thr Ser Leu Phe
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 Val Arg Asp Ala Thr Arg Asp His Arg Gly Val Tyr Thr Val Glu Ala
 21525 21530 21535
 Lys Asn Ala Ser Gly Ser Ala Lys Ala Glu Ile Lys Val Lys Val Gln
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 Asp Thr Pro Gly Lys Val Val Gly Pro Ile Arg Phe Thr Asn Ile Thr
 21555 21560 21565
 Gly Glu Lys Met Thr Leu Trp Trp Asp Ala Pro Leu Asn Asp Gly Cys
 21570 21575 21580 2
 Ala Pro Ile Thr His Tyr Ile Ile Glu Lys Arg Glu Thr Ser Arg Leu
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 Ala Trp Ala Leu Ile Glu Asp Lys Cys Glu Ala Gln Ser Tyr Thr Ala
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 Ile Lys Leu Ile Asn Gly Asn Glu Tyr Gln Phe Arg Val Ser Ala Val
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 Asn Lys Phe Gly Val Gly Arg Pro Leu Asp Ser Asp Pro Val Val Ala
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 Gln Ile Gln Tyr Thr Val Pro Asp Ala Pro Gly Ile Pro Glu Pro Ser
 21650 21655 21660 2
 Asn Ile Thr Gly Asn Ser Ile Thr Leu Thr Trp Ala Arg Pro Glu Ser
 1665 21670 21675 21680
 Asp Gly Gly Ser Glu Ile Gln Gln Tyr Ile Leu Glu Arg Arg Glu Lys
 21685 21690 21695
 Lys Ser Thr Arg Trp Val Lys Val Ile Ser Lys Arg Pro Ile Ser Glu
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 Thr Arg Phe Lys Val Thr Gly Leu Thr Glu Gly Asn Glu Tyr Glu Phe
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 His Val Met Ala Glu Asn Ala Ala Gly Val Gly Pro Ala Ser Gly Ile
 21730 21735 21740 2
 Ser Arg Leu Ile Lys Cys Arg Glu Pro Val Asn Pro Pro Gly Pro Pro
 1745 21750 21755 21760

Thr Val Val Lys Val Thr Asp Thr Ser Lys Thr Thr Val Ser Leu Glu
 21765 21770 21775
 Trp Ser Lys Pro Val Phe Asp Gly Gly Met Glu Ile Ile Gly Tyr Ile
 21780 21785 21790
 Ile Glu Met Cys Lys Thr Asp Leu Gly Asp Trp His Lys Val Asn Ala
 21795 21800 21805
 Glu Ala Cys Val Lys Thr Arg Tyr Thr Val Thr Asp Leu Gln Ala Gly 2
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 Glu Glu Tyr Lys Phe Arg Val Ser Ala Ile Asn Gly Ala Gly Lys Gly
 1825 21830 21835 21840
 Asp Ser Cys Glu Val Thr Gly Thr Ile Lys Ala Val Asp Arg Leu Thr
 21845 21850 21855
 Ala Pro Glu Leu Asp Ile Asp Ala Asn Phe Lys Gln Thr His Val Val
 21860 21865 21870
 Arg Ala Gly Ala Ser Ile Arg Leu Phe Ile Ala Tyr Gln Gly Arg Pro
 21875 21880 21885
 Thr Pro Thr Ala Val Trp Ser Lys Pro Asp Ser Asn Leu Ser Leu Arg 2
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 Ala Asp Ile His Thr Thr Asp Ser Phe Ser Thr Leu Thr Val Glu Asn
 1905 21910 21915 21920
 Cys Asn Arg Asn Asp Ala Gly Lys Tyr Thr Leu Thr Val Glu Asn Asn
 21925 21930 21935
 Ser Gly Ser Lys Ser Ile Thr Phe Thr Val Lys Val Leu Asp Thr Pro
 21940 21945 21950
 Gly Pro Pro Gly Pro Ile Thr Phe Lys Asp Val Thr Arg Gly Ser Ala
 21955 21960 21965
 Thr Leu Met Trp Asp Ala Pro Leu Leu Asp Gly Gly Ala Arg Ile His 2
 21970 21975 21980
 His Tyr Val Val Glu Lys Arg Glu Ala Ser Arg Arg Ser Trp Gln Val
 1985 21990 21995 22000
 Ile Ser Glu Lys Cys Thr Arg Gln Ile Phe Lys Val Asn Asp Leu Ala
 22005 22010 22015
 Glu Gly Val Pro Tyr Tyr Phe Arg Val Ser Ala Val Asn Glu Tyr Gly
 22020 22025 22030
 Val Gly Glu Pro Tyr Glu Met Pro Glu Pro Ile Val Ala Thr Glu Gln
 22035 22040 22045
 Pro Ala Pro Pro Arg Arg Leu Asp Val Val Asp Thr Ser Lys Ser Ser 2
 22050 22055 22060
 Ala Val Leu Ala Trp Leu Lys Pro Asp His Asp Gly Gly Ser Arg Ile
 2065 22070 22075 22080
 Thr Gly Tyr Leu Leu Glu Met Arg Gln Lys Gly Ser Asp Leu Trp Val
 22085 22090 22095
 Glu Ala Gly His Thr Lys Gln Leu Thr Phe Thr Val Glu Arg Leu Val
 22100 22105 22110
 Glu Lys Thr Glu Tyr Glu Phe Arg Val Lys Ala Lys Asn Asp Ala Gly
 22115 22120 22125
 Tyr Ser Glu Pro Arg Glu Ala Phe Ser Ser Val Ile Ile Lys Glu Pro 2
 22130 22135 22140
 Gln Ile Glu Pro Thr Ala Asp Leu Thr Gly Ile Thr Asn Gln Leu Ile
 2145 22150 22155 22160
 Thr Cys Lys Ala Gly Ser Pro Phe Thr Ile Asp Val Pro Ile Ser Gly
 22165 22170 22175
 Arg Pro Ala Pro Lys Val Thr Trp Lys Leu Glu Glu Met Arg Leu Lys
 22180 22185 22190
 Glu Thr Asp Arg Val Ser Ile Thr Thr Thr Lys Asp Arg Thr Thr Leu
 22195 22200 22205
 Thr Val Lys Asp Ser Met Arg Gly Asp Ser Gly Arg Tyr Phe Leu Thr 2
 22210 22215 22220

Leu Glu Asn Thr Ala Gly Val Lys Thr Phe Ser Val Thr Val Val Val
 2225 22230 22235 22240
 Ile Gly Arg Pro Gly Pro Val Thr Gly Pro Ile Glu Val Ser Ser Val
 22245 22250 22255
 Ser Ala Glu Ser Cys Val Leu Ser Trp Gly Glu Pro Lys Asp Gly Gly
 22260 22265 22270
 Gly Thr Glu Ile Thr Asn Tyr Ile Val Glu Lys Arg Glu Ser Gly Thr
 22275 22280 22285
 Thr Ala Trp Gln Leu Val Asn Ser Ser Val Lys Arg Thr Gln Ile Lys
 22290 22295 22300 2
 Val Thr His Leu Thr Lys Tyr Met Glu Tyr Ser Phe Arg Val Ser Ser
 2305 22310 22315 22320
 Glu Asn Arg Phe Gly Val Ser Lys Pro Leu Glu Ser Ala Pro Ile Ile
 22325 22330 22335
 Ala Glu His Pro Phe Val Pro Pro Ser Ala Pro Thr Arg Pro Glu Val
 22340 22345 22350
 Tyr His Val Ser Ala Asn Ala Met Ser Ile Arg Trp Glu Glu Pro Tyr
 22355 22360 22365
 His Asp Gly Gly Ser Lys Ile Ile Gly Tyr Trp Val Glu Lys Lys Glu
 22370 22375 22380 2
 Arg Asn Thr Ile Leu Trp Val Lys Glu Asn Lys Val Pro Cys Leu Glu
 2385 22390 22395 22400
 Cys Asn Tyr Lys Val Thr Gly Leu Val Glu Gly Leu Glu Tyr Gln Phe
 22405 22410 22415
 Arg Thr Tyr Ala Leu Asn Ala Ala Gly Val Ser Lys Ala Ser Glu Ala
 22420 22425 22430
 Ser Arg Pro Ile Met Ala Gln Asn Pro Val Asp Ala Pro Gly Arg Pro
 22435 22440 22445
 Glu Val Thr Asp Val Thr Arg Ser Thr Val Ser Leu Ile Trp Ser Ala
 22450 22455 22460 2
 Pro Ala Tyr Asp Gly Gly Ser Lys Val Val Gly Tyr Ile Ile Glu Arg
 2465 22470 22475 22480
 Lys Pro Val Ser Glu Val Gly Asp Gly Arg Trp Leu Lys Cys Asn Tyr
 22485 22490 22495
 Thr Ile Val Ser Asp Asn Phe Phe Thr Val Thr Ala Leu Ser Glu Gly
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 Asp Thr Tyr Glu Phe Arg Val Leu Ala Lys Asn Ala Ala Gly Val Ile
 22515 22520 22525
 Ser Lys Gly Ser Glu Ser Thr Gly Pro Val Thr Cys Arg Asp Glu Tyr
 22530 22535 22540 2
 Ala Pro Pro Lys Ala Glu Leu Asp Ala Arg Leu His Gly Asp Leu Val
 2545 22550 22555 22560
 Thr Ile Arg Ala Gly Ser Asp Leu Val Leu Asp Ala Ala Val Gly Gly
 22565 22570 22575
 Lys Pro Glu Pro Lys Ile Ile Trp Thr Lys Gly Asp Lys Glu Leu Asp
 22580 22585 22590
 Leu Cys Glu Lys Val Ser Leu Gln Tyr Thr Gly Lys Arg Ala Thr Ala
 22595 22600 22605
 Val Ile Lys Phe Cys Asp Arg Ser Asp Ser Gly Lys Tyr Thr Leu Thr
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 Val Lys Asn Ala Ser Gly Thr Lys Ala Val Ser Val Met Val Lys Val
 2625 22630 22635 22640
 Leu Asp Ser Pro Gly Pro Cys Gly Lys Leu Thr Val Ser Arg Val Thr
 22645 22650 22655
 Gln Glu Lys Cys Thr Leu Ala Trp Ser Leu Pro Gln Glu Asp Gly Gly
 22660 22665 22670
 Ala Glu Ile Thr His Tyr Ile Val Glu Arg Arg Glu Thr Ser Arg Leu
 22675 22680 22685

Asn Trp Val Ile Val Glu Gly Glu Cys Pro Thr Leu Ser Tyr Val Val
 22690 22695 22700 2
 Thr Arg Leu Ile Lys Asn Asn Glu Tyr Ile Phe Arg Val Arg Ala Val
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 Asn Lys Tyr Gly Pro Gly Val Pro Val Glu Ser Glu Pro Ile Val Ala
 22725 22730 22735
 Arg Asn Ser Phe Thr Ile Pro Ser Pro Gly Ile Pro Glu Glu Val
 22740 22745 22750
 Gly Thr Gly Lys Glu His Ile Ile Ile Gln Trp Thr Lys Pro Glu Ser
 22755 22760 22765
 Asp Gly Gly Asn Glu Ile Ser Asn Tyr Leu Val Asp Lys Arg Glu Lys
 22770 22775 22780 2
 Glu Ser Leu Arg Trp Thr Arg Val Asn Lys Asp Tyr Val Val Tyr Asp
 2785 22790 22795 22800
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 Ser Asn Phe Ile Ser Cys Arg Glu Pro Ser Tyr Thr Pro Gly Pro Pro
 22835 22840 22845
 Ser Ala Pro Arg Val Val Asp Thr Thr Lys His Ser Ile Ser Leu Ala
 22850 22855 22860 2
 Trp Thr Lys Pro Met Tyr Asp Gly Gly Thr Asp Ile Val Gly Tyr Val
 2865 22870 22875 22880
 Leu Glu Met Gln Glu Lys Asp Thr Asp Gln Trp Tyr Arg Val His Thr
 22885 22890 22895
 Asn Ala Thr Ile Arg Asn Thr Glu Phe Thr Val Pro Asp Leu Lys Met
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 Gly Gln Lys Tyr Ser Phe Arg Val Ala Ala Val Asn Val Lys Gly Met
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 Ser Glu Tyr Ser Glu Ser Ile Ala Glu Ile Glu Pro Val Glu Arg Ile
 22930 22935 22940 2
 Glu Ile Pro Asp Leu Glu Leu Ala Asp Asp Leu Lys Lys Thr Val Thr
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 Ile Arg Ala Gly Ala Ser Leu Arg Leu Met Val Ser Val Ser Gly Arg
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 Pro Pro Pro Val Ile Thr Trp Ser Lys Gln Gly Ile Asp Leu Ala Ser
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 Arg Ala Ile Ile Asp Thr Thr Glu Ser Tyr Ser Leu Leu Ile Val Asp
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 Lys Val Asn Arg Tyr Asp Ala Gly Lys Tyr Thr Ile Glu Ala Glu Asn
 23010 23015 23020 2
 Gln Ser Gly Lys Lys Ser Ala Thr Val Leu Val Lys Val Tyr Asp Thr
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 Pro Gly Pro Cys Pro Ser Val Lys Val Lys Glu Val Ser Arg Asp Ser
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 Val Thr Ile Thr Trp Glu Ile Pro Thr Ile Asp Gly Gly Ala Pro Ile
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 Asn Asn Tyr Ile Val Glu Lys Arg Glu Ala Ala Met Arg Ala Phe Lys
 23075 23080 23085
 Thr Val Thr Thr Lys Cys Ser Lys Thr Leu Tyr Arg Ile Ser Gly Leu
 23090 23095 23100 2
 Val Glu Gly Thr Met His Tyr Phe Arg Val Leu Pro Glu Asn Ile Tyr
 3105 23110 23115 23120
 Gly Ile Gly Glu Pro Cys Glu Thr Ser Asp Ala Val Leu Val Ser Glu
 23125 23130 23135
 Val Pro Leu Val Pro Ala Lys Leu Glu Val Val Asp Val Thr Lys Ser
 23140 23145 23150

Thr Val Thr Leu Ala Trp Glu Lys Pro Leu Tyr Asp Gly Gly Ser Arg
 23155 23160 23165
 Leu Thr Gly Tyr Val Leu Glu Ala Cys Lys Ala Gly Thr Glu Arg Trp
 23170 23175 23180 2
 Met Lys Val Val Thr Leu Lys Pro Thr Val Leu Glu His Thr Val Thr
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 Ser Leu Asn Glu Gly Glu Gln Tyr Leu Phe Arg Ile Arg Ala Gln Asn
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 Glu Lys Gly Val Ser Glu Pro Arg Glu Thr Val Thr Ala Val Thr Val
 23220 23225 23230
 Gln Asp Leu Arg Val Leu Pro Thr Ile Asp Leu Ser Thr Met Pro Gln
 23235 23240 23245
 Lys Thr Ile His Val Pro Ala Gly Arg Pro Val Glu Leu Val Ile Pro
 23250 23255 23260 2
 Ile Ala Gly Arg Pro Pro Pro Ala Ala Ser Trp Phe Phe Ala Gly Ser
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 Lys Leu Arg Glu Ser Glu Arg Val Thr Val Glu Thr His Thr Lys Val
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 Ala Lys Leu Thr Ile Arg Glu Thr Thr Ile Arg Asp Thr Gly Glu Tyr
 23300 23305 23310
 Thr Leu Glu Leu Lys Asn Val Thr Gly Thr Thr Ser Glu Thr Ile Lys
 23315 23320 23325
 Val Ile Ile Leu Asp Lys Pro Gly Pro Pro Thr Gly Pro Ile Lys Ile
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 Asp Glu Ile Asp Ala Thr Ser Ile Thr Ile Ser Trp Glu Pro Pro Glu
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 Leu Asp Gly Gly Ala Pro Leu Ser Gly Tyr Val Val Glu Gln Arg Asp
 23365 23370 23375
 Ala His Arg Pro Gly Trp Leu Pro Val Ser Glu Ser Val Thr Arg Ser
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 Thr Phe Lys Phe Thr Arg Leu Thr Glu Gly Asn Glu Tyr Val Phe Arg
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 Val Ala Ala Thr Asn Arg Phe Gly Ile Gly Ser Tyr Leu Gln Ser Glu
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 Val Ile Glu Cys Arg Ser Ser Ile Arg Ile Pro Gly Pro Pro Glu Thr
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 Leu Gln Ile Phe Asp Val Ser Arg Asp Gly Met Thr Leu Thr Trp Tyr
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 Pro Pro Glu Asp Asp Gly Gly Ser Gln Val Thr Gly Tyr Ile Val Glu
 23460 23465 23470
 Arg Lys Glu Val Arg Ala Asp Arg Trp Val Arg Val Asn Lys Val Pro
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 Val Thr Met Thr Arg Tyr Arg Ser Thr Gly Leu Thr Glu Gly Leu Glu
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 Tyr Glu His Arg Val Thr Ala Ile Asn Ala Arg Gly Ser Gly Lys Pro
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 Ser Arg Pro Ser Lys Pro Ile Val Ala Met Asp Pro Ile Ala Pro Pro
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 Gly Lys Pro Gln Asn Pro Arg Val Thr Asp Thr Thr Arg Thr Ser Val
 23540 23545 23550
 Ser Leu Ala Trp Ser Val Pro Glu Asp Glu Gly Gly Ser Lys Val Thr
 23555 23560 23565
 Gly Tyr Leu Ile Glu Met Gln Lys Val Asp Gln His Glu Trp Thr Lys
 23570 23575 23580 2
 Cys Asn Thr Thr Pro Thr Lys Ile Arg Glu Tyr Thr Leu Thr His Leu
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 Pro Gln Gly Ala Glu Tyr Arg Phe Arg Val Leu Ala Cys Asn Ala Gly
 23605 23610 23615

Gly Pro Gly Glu Pro Ala Glu Val Pro Gly Thr Val Lys Val Thr Glu
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 Met Leu Glu Tyr Pro Asp Tyr Glu Leu Asp Glu Arg Tyr Gln Glu Gly
 23635 23640 23645
 Ile Phe Val Arg Gln Gly Gly Val Ile Arg Leu Thr Ile Pro Ile Lys
 23650 23655 23660 2
 Gly Lys Pro Phe Pro Ile Cys Lys Trp Thr Lys Glu Gly Gln Asp Ile
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 Ser Lys Arg Ala Met Ile Ala Thr Ser Glu Thr His Thr Glu Leu Val
 23685 23690 23695
 Ile Lys Glu Ala Asp Arg Gly Asp Ser Gly Thr Tyr Asp Leu Val Leu
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 Glu Asn Lys Cys Gly Lys Lys Ala Val Tyr Ile Lys Val Arg Val Ile
 23715 23720 23725
 Gly Ser Pro Asn Ser Pro Glu Gly Pro Leu Glu Tyr Asp Asp Ile Gln
 23730 23735 23740 2
 Val Arg Ser Val Arg Val Ser Trp Arg Pro Pro Ala Asp Asp Gly Gly
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 Ala Asp Ile Leu Gly Tyr Ile Leu Glu Arg Arg Glu Val Pro Lys Ala
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 Ala Trp Tyr Thr Ile Asp Ser Arg Val Arg Gly Thr Ser Leu Val Val
 23780 23785 23790
 Lys Gly Leu Lys Glu Asn Val Glu Tyr His Phe Arg Val Ser Ala Glu
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 Asn Gln Phe Gly Ile Ser Lys Pro Leu Lys Ser Glu Glu Pro Val Thr
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 Pro Lys Thr Pro Leu Asn Pro Pro Glu Pro Pro Ser Asn Pro Pro Glu
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 Val Leu Asp Val Thr Lys Ser Ser Val Ser Leu Ser Trp Ser Arg Pro
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 Lys Asp Asp Gly Gly Ser Arg Val Thr Gly Tyr Tyr Ile Glu Arg Lys
 23860 23865 23870
 Glu Thr Ser Thr Asp Lys Trp Val Arg His Asn Lys Thr Gln Ile Thr
 23875 23880 23885
 Thr Thr Met Tyr Thr Val Thr Gly Leu Val Pro Asp Ala Glu Tyr Gln
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 Phe Arg Ile Ile Ala Gln Asn Asp Val Gly Leu Ser Glu Thr Ser Pro
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 Ala Ser Glu Pro Val Val Cys Lys Asp Pro Phe Asp Lys Pro Ser Gln
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 Pro Gly Glu Leu Glu Ile Leu Ser Ile Ser Lys Asp Ser Val Thr Leu
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 Gln Trp Glu Lys Pro Glu Cys Asp Gly Gly Lys Glu Ile Leu Gly Tyr
 23955 23960 23965
 Trp Val Glu Tyr Arg Gln Ser Gly Asp Ser Ala Trp Lys Lys Ser Asn
 23970 23975 23980 2
 Lys Glu Arg Ile Lys Asp Lys Gln Phe Thr Ile Gly Gly Leu Leu Glu
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 Ala Thr Glu Tyr Glu Phe Arg Val Phe Ala Glu Asn Glu Thr Gly Leu
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 Ser Arg Pro Arg Arg Thr Ala Met Ser Ile Lys Thr Lys Leu Thr Ser
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 Gly Glu Ala Pro Gly Ile Arg Lys Glu Met Lys Asp Val Thr Thr Lys
 24035 24040 24045
 Leu Gly Glu Ala Ala Gln Leu Ser Cys Gln Ile Val Gly Arg Pro Leu
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 Pro Asp Ile Lys Trp Tyr Arg Phe Gly Lys Glu Leu Ile Gln Ser Arg
 4065 24070 24075 24080

Lys Tyr Lys Met Ser Ser Asp Gly Arg Thr His Thr Leu Thr Val Met
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 Thr Glu Glu Gln Glu Asp Glu Gly Val Tyr Thr Cys Ile Ala Thr Asn
 24100 24105 24110
 Glu Val Gly Glu Val Glu Thr Ser Ser Lys Leu Leu Leu Gln Ala Thr
 24115 24120 24125
 Pro Gln Phe His Pro Gly Tyr Pro Leu Lys Glu Lys Tyr Tyr Gly Ala
 24130 24135 24140 2
 Val Gly Ser Thr Leu Arg Leu His Val Met Tyr Ile Gly Arg Pro Val
 4145 24150 24155 24160
 Pro Ala Met Thr Trp Phe His Gly Gln Lys Leu Leu Gln Asn Ser Glu
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 Asn Ile Thr Ile Glu Asn Thr Glu His Tyr Thr His Leu Val Met Lys
 24180 24185 24190
 Asn Val Gln Arg Lys Thr His Ala Gly Lys Tyr Lys Val Gln Leu Ser
 24195 24200 24205
 Asn Val Phe Gly Thr Val Asp Ala Ile Leu Asp Val Glu Ile Gln Asp
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 Lys Pro Asp Lys Pro Thr Gly Pro Ile Val Ile Glu Ala Leu Leu Lys
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 Asn Ser Ala Val Ile Ser Trp Lys Pro Pro Ala Asp Asp Gly Gly Ser
 24245 24250 24255
 Trp Ile Thr Asn Tyr Val Val Glu Lys Cys Glu Ala Lys Glu Gly Ala
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 Glu Trp Gln Leu Val Ser Ser Ala Ile Ser Val Thr Thr Cys Arg Ile
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 Val Asn Leu Thr Glu Asn Ala Gly Tyr Tyr Phe Arg Val Ser Ala Gln
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 Asn Thr Phe Gly Ile Ser Asp Pro Leu Glu Val Ser Ser Val Val Ile
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 Thr Ala Val Thr Lys Asp Ser Cys Val Val Ala Trp Lys Pro Pro Ala
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 Ser Asp Gly Gly Ala Lys Ile Arg Asn Tyr Tyr Leu Glu Lys Arg Glu
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 Lys Lys Gln Asn Lys Trp Ile Ser Val Thr Thr Glu Glu Ile Arg Glu
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 Thr Val Phe Ser Val Lys Asn Leu Ile Glu Gly Leu Glu Tyr Glu Phe
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 Arg Val Lys Cys Glu Asn Leu Gly Gly Glu Ser Glu Trp Ser Glu Ile
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 Ser Glu Pro Ile Thr Pro Lys Ser Asp Val Pro Ile Gln Ala Pro His
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 Phe Lys Glu Glu Leu Arg Asn Leu Asn Val Arg Tyr Gln Ser Asn Ala
 24435 24440 24445
 Thr Leu Val Cys Lys Val Thr Gly His Pro Lys Pro Ile Val Lys Trp
 24450 24455 24460 2
 Tyr Arg Gln Gly Lys Glu Ile Ile Ala Asp Gly Leu Lys Tyr Arg Ile
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 Gln Glu Phe Lys Gly Gly Tyr His Gln Leu Ile Ile Ala Ser Val Thr
 24485 24490 24495
 Asp Asp Asp Ala Thr Val Tyr Gln Val Arg Ala Thr Asn Gln Gly Gly
 24500 24505 24510
 Ser Val Ser Gly Thr Ala Ser Leu Glu Val Glu Val Pro Ala Lys Ile
 24515 24520 24525
 His Leu Pro Lys Thr Leu Glu Gly Met Gly Ala Val His Ala Leu Arg
 24530 24535 24540 2

Gly Glu Val Val Ser Ile Lys Ile Pro Phe Ser Gly Lys Pro Asp Pro
 4545 24550 24555 24560
 Val Ile Thr Trp Gln Lys Gly Gln Asp Leu Ile Asp Asn Asn Gly His
 24565 24570 24575
 Tyr Gln Val Ile Val Thr Arg Ser Phe Thr Ser Leu Val Phe Pro Asn
 24580 24585 24590
 Gly Val Glu Arg Lys Asp Ala Gly Phe Tyr Val Val Cys Ala Lys Asn
 24595 24600 24605
 Arg Phe Gly Ile Asp Gln Lys Thr Val Glu Leu Asp Val Ala Asp Val
 24610 24615 24620 2
 Pro Asp Pro Pro Arg Gly Val Lys Val Ser Asp Ala Ser Arg Asp Ser
 4625 24630 24635 24640
 Val Asn Leu Thr Trp Thr Glu Pro Ala Ser Asp Gly Gly Ser Lys Ile
 24645 24650 24655
 Thr Asn Tyr Ile Val Glu Lys Cys Ala Thr Thr Ala Glu Arg Trp Leu
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 Arg Val Gly Gln Ala Arg Glu Thr Arg Tyr Thr Val Ile Asn Leu Phe
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 Gly Lys Thr Ser Tyr Gln Phe Arg Val Ile Ala Glu Asn Lys Phe Gly
 24690 24695 24700 2
 Leu Ser Lys Pro Ser Glu Pro Ser Glu Pro Thr Ile Thr Lys Glu Asp
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 Lys Thr Arg Ala Met Asn Tyr Asp Glu Glu Val Asp Glu Thr Arg Glu
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 Val Ser Met Thr Lys Ala Ser His Ser Ser Thr Lys Glu Leu Tyr Glu
 24740 24745 24750
 Lys Tyr Met Ile Ala Glu Asp Leu Gly Arg Gly Glu Phe Gly Ile Val
 24755 24760 24765
 His Arg Cys Val Glu Thr Ser Ser Lys Lys Thr Tyr Met Ala Lys Phe
 24770 24775 24780 2
 Val Lys Val Lys Gly Thr Asp Gln Val Leu Val Lys Lys Glu Ile Ser
 4785 24790 24795 24800
 Ile Leu Asn Ile Ala Arg His Arg Asn Ile Leu His Leu His Glu Ser
 24805 24810 24815
 Phe Glu Ser Met Glu Glu Leu Val Met Ile Phe Glu Phe Ile Ser Gly
 24820 24825 24830
 Leu Asp Ile Phe Glu Arg Ile Asn Thr Ser Ala Phe Glu Leu Asn Glu
 24835 24840 24845
 Arg Glu Ile Val Ser Tyr Val His Gln Val Cys Glu Ala Leu Gln Phe
 24850 24855 24860 2
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